

**USPTO
BEFORE THE PTAB
THERMALTAKE (PETITIONER)
v.
CHEN (PATENT OWNER)**

IPR2024-0123

Patent 10,690,336 ('336 Patent)

Patent Owner's Demonstratives

'336 PATENT

- FIG. 1 shows an embodiment of an illumination fan connectable with at least one other illumination fan.
- The power socket (4) is electrically connected with the first and second connectors (5/6) as well as the rotating fan (2) and the illumination area (3).
- FIG. 2 shows connections between any two adjacent illumination fans.

(POR [Paper 18] at 2-3)

Slide No. 2

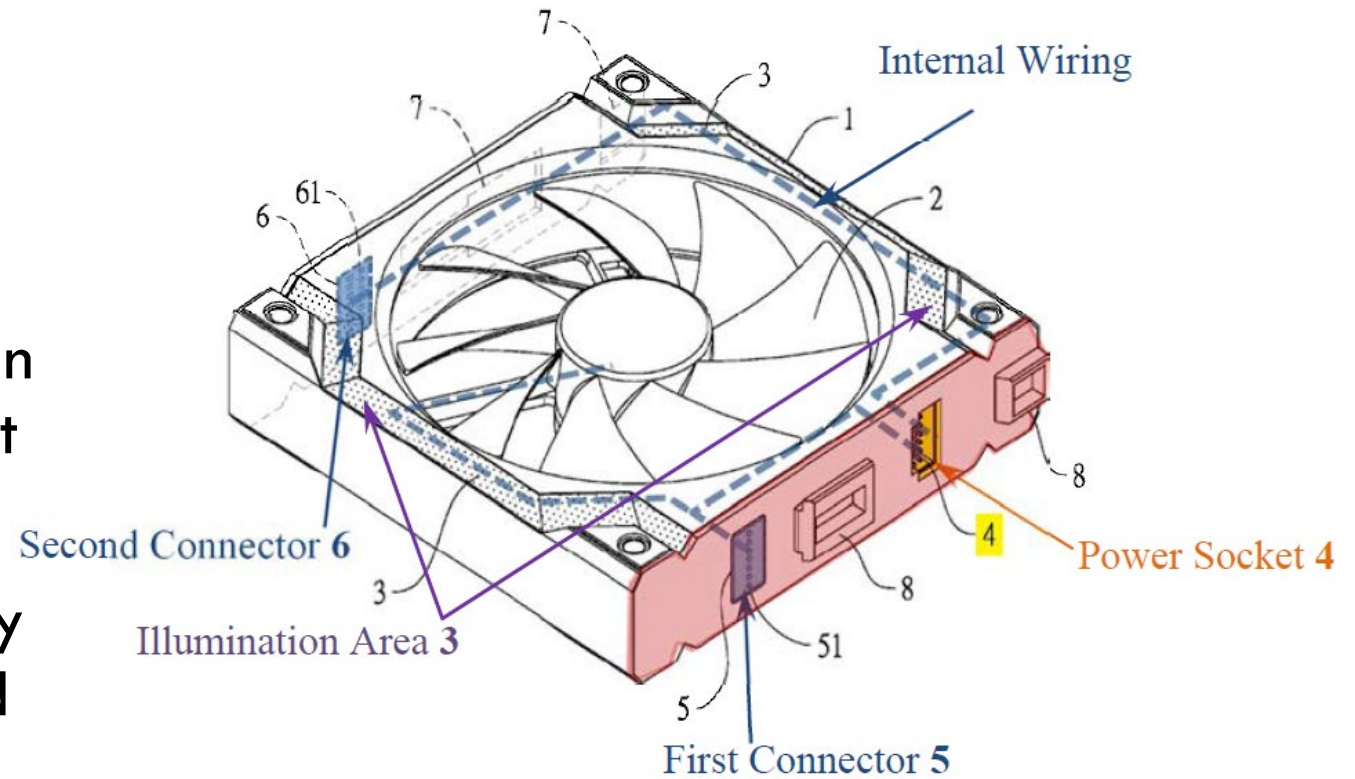


Fig. 1

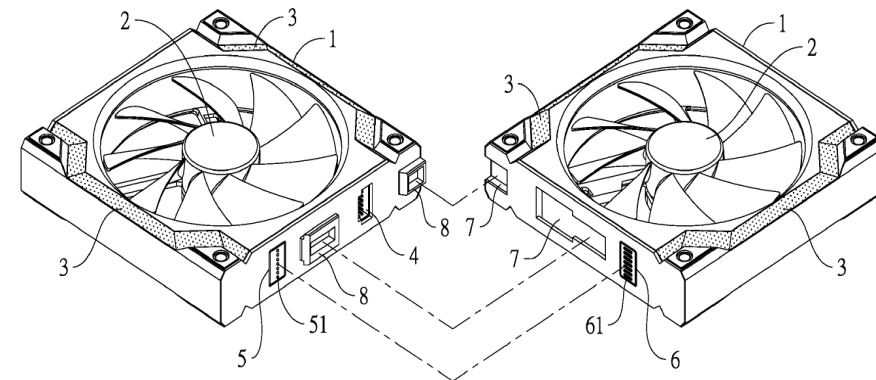


Fig. 2

DEMONSTRATIVE EXHIBIT — NOT EVIDENCE 12/11/2025

'336 PATENT

- Power socket 4 is electrically connected with second connector 6 ('336 Patent, 2:67-3:3) so can be supplied with power via second connector 6, which can receive power from a prior illumination fan's first connector 5 as shown in FIG. 2 (*Id.*, 3:7-16).

(POR [Paper 18] at 3)

Slide No. 3

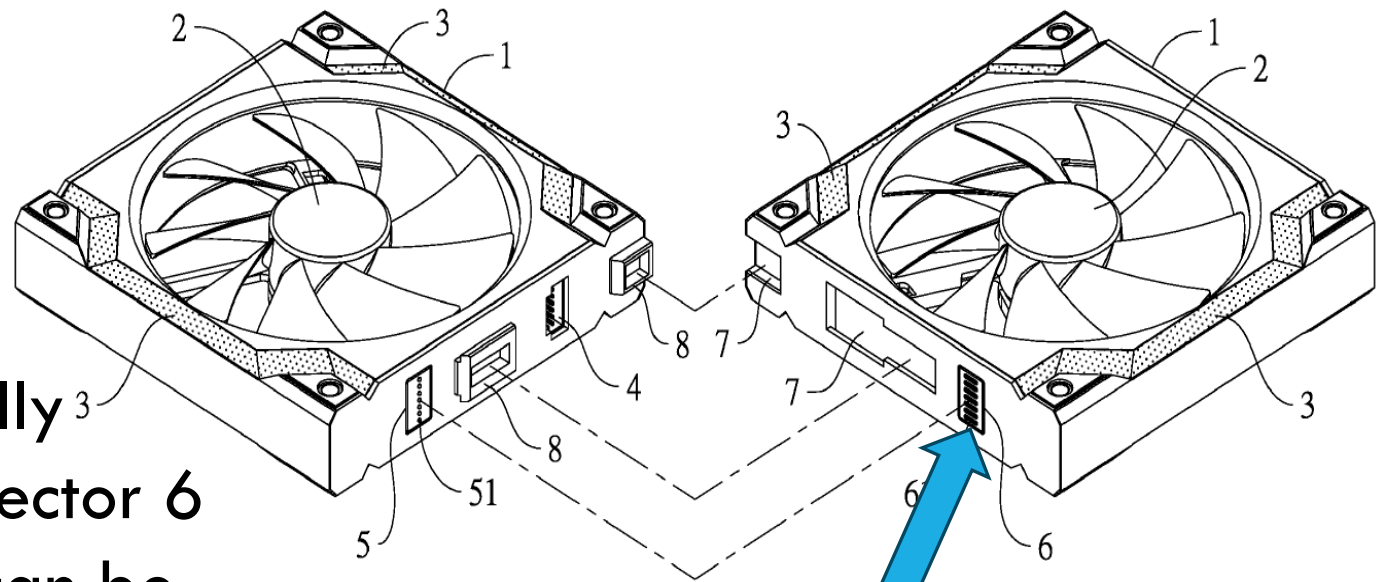


Fig. 2

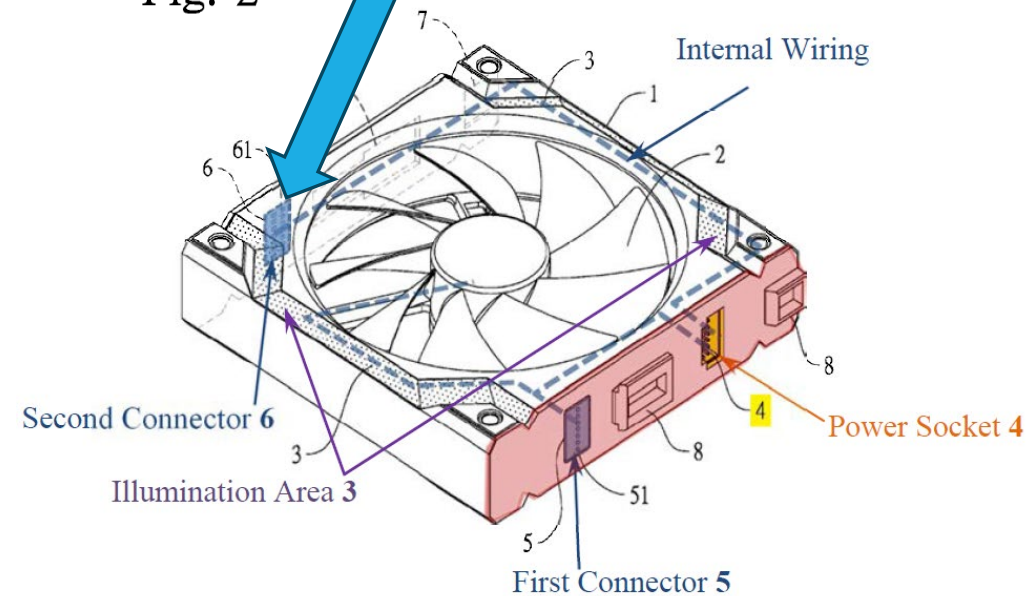


Fig. 1

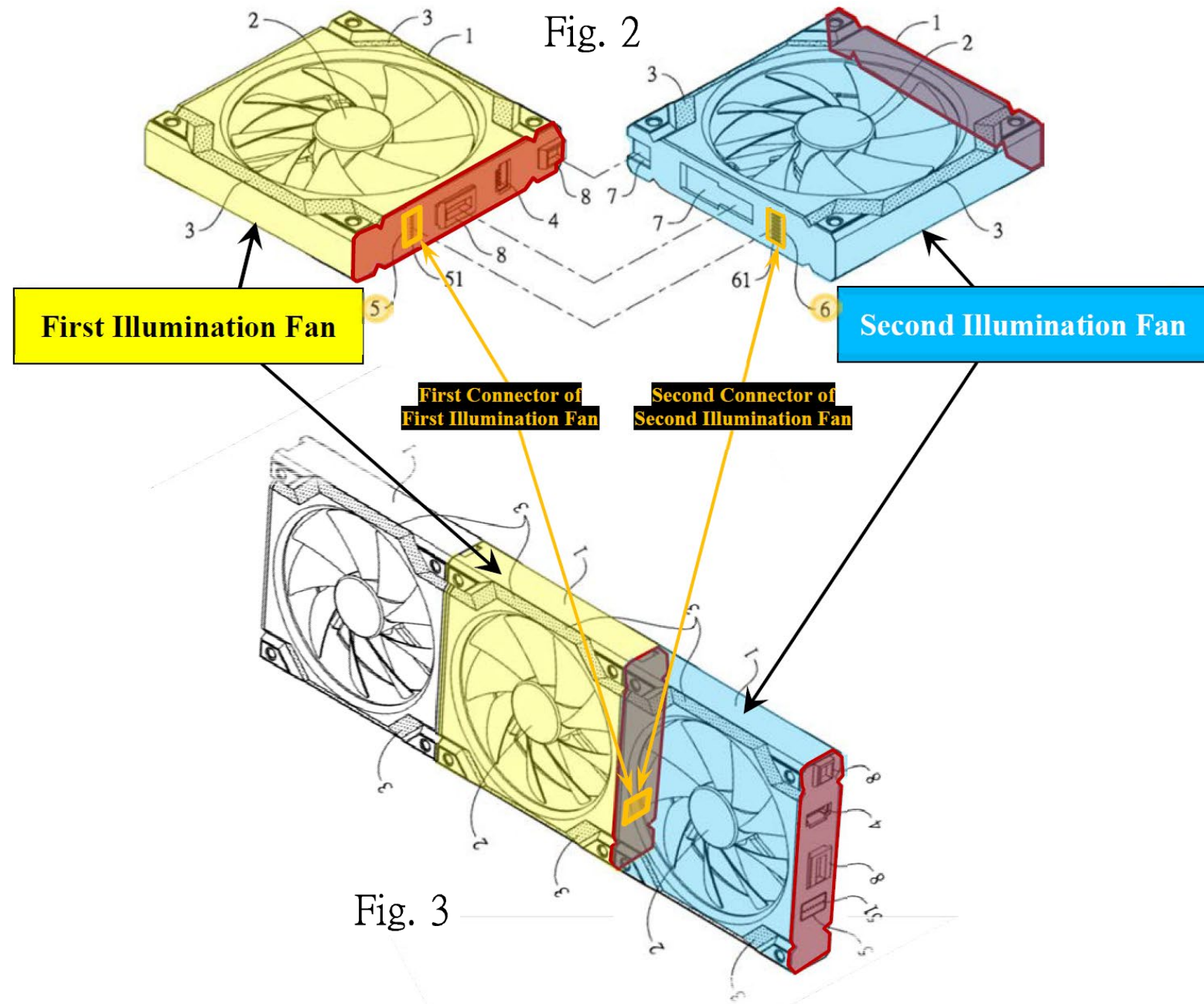
DEMONSTRATIVE EXHIBIT — NOT EVIDENCE 12/11/2025

'336 PATENT

- FIGS. 2-3 together show a first illumination fan connected with a second illumination fan among 3 daisy-chained illumination fans.
- It is Petitioner's burden to "specify where each element of the claim is found in the prior art patents or printed publications relied upon." 37 C.F.R. § 42.104(b)(4). (PO Sur-Reply [Paper 35] at 16.)

(POR [Paper 18] at 4-5)

Slide No. 4



DEMONSTRATIVE EXHIBIT — NOT EVIDENCE 12/11/2025

CLAIM 1

1. [preamble] An illumination fan connectable with at least one illumination fan for a computer, comprising:

[a] a body, provided with a fan in center of the body,

[b] an illumination area on at least two sides of the fan at top of the body,

[c] a power socket and a first connector on one side of the body, and a second connector on another side of the body,

[d] wherein the power socket is electrically connected with the first connector, the second connector, the fan and the illumination area, such that when the power socket on the one side of the body is supplied with power, the fan and the illumination area of the body are respectively driven into rotation and illumination, and when the first connector of the body is connected with a second connector of a body of another illumination fan, a fan and an illumination area of the body of another illumination fan are respectively driven into rotation and illumination.

(POR at 6)

Slide No. 5

PETITIONER'S GROUNDS

Ground	35 U.S.C. §	Claims	References
1	103	1-3	Tsuji (Ex-1006/Ex-1007), Huang (Ex-1008)
2	103	4	Tsuji, Huang, Echazarreta (Ex-1009)
3	103	5	Tsuji, Huang, Chou (Ex-1010)/Liu (Ex-1011)
4	103	1-2	Lai (Ex-1012), Hasegawa (Ex-1013/Ex-1014)
5	103	3	Lai, Hasegawa, Huang
6	103	4	Lai, Hasegawa, Echazarreta
7	103	5	Lai, Hasegawa, Chou/Liu

(Petition [Paper 1] at 5-6; POR [Paper 18] at 9)

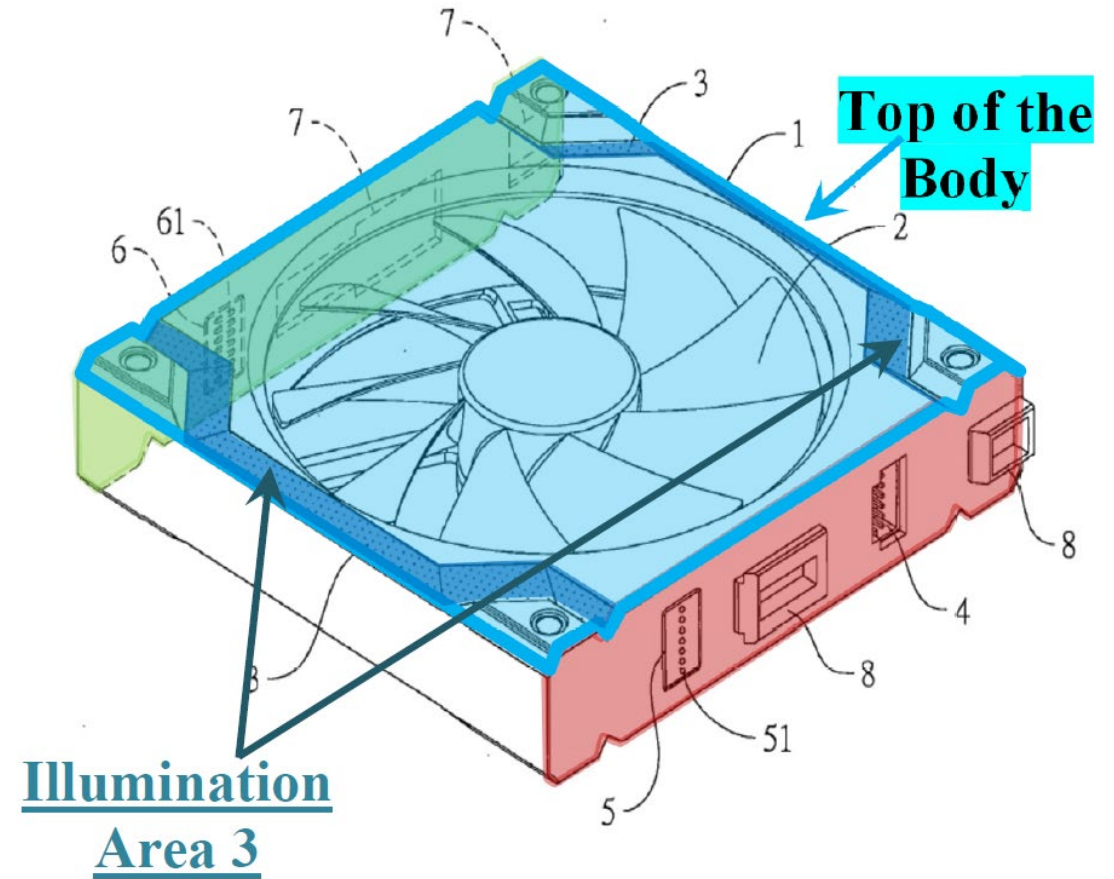
PETITION DISPUTES

- Whether Lai/Hasegawa fails to teach claim 1 under Ground 4
- Whether Tsuji/Huang fails to teach claim 1 under Ground 1
- Whether Echazarreta is combinable with the cited art below to teach claim 4:
 - Tsuji/Huang under Ground 2
 - Lai/Hasegawa under Ground 6
- Whether Chou or Liu teaches limitations in claim 5
- Whether Chou or Liu is combinable with the cited art below to teach claim 5:
 - Tsuji/Huang under Ground 3
 - Lai/Hasegawa under Ground 7

(POR [Paper 18] at i-ii and 14-69)

NO ILLUMINATION AREA AT TOP OF LAI'S FAN BODY

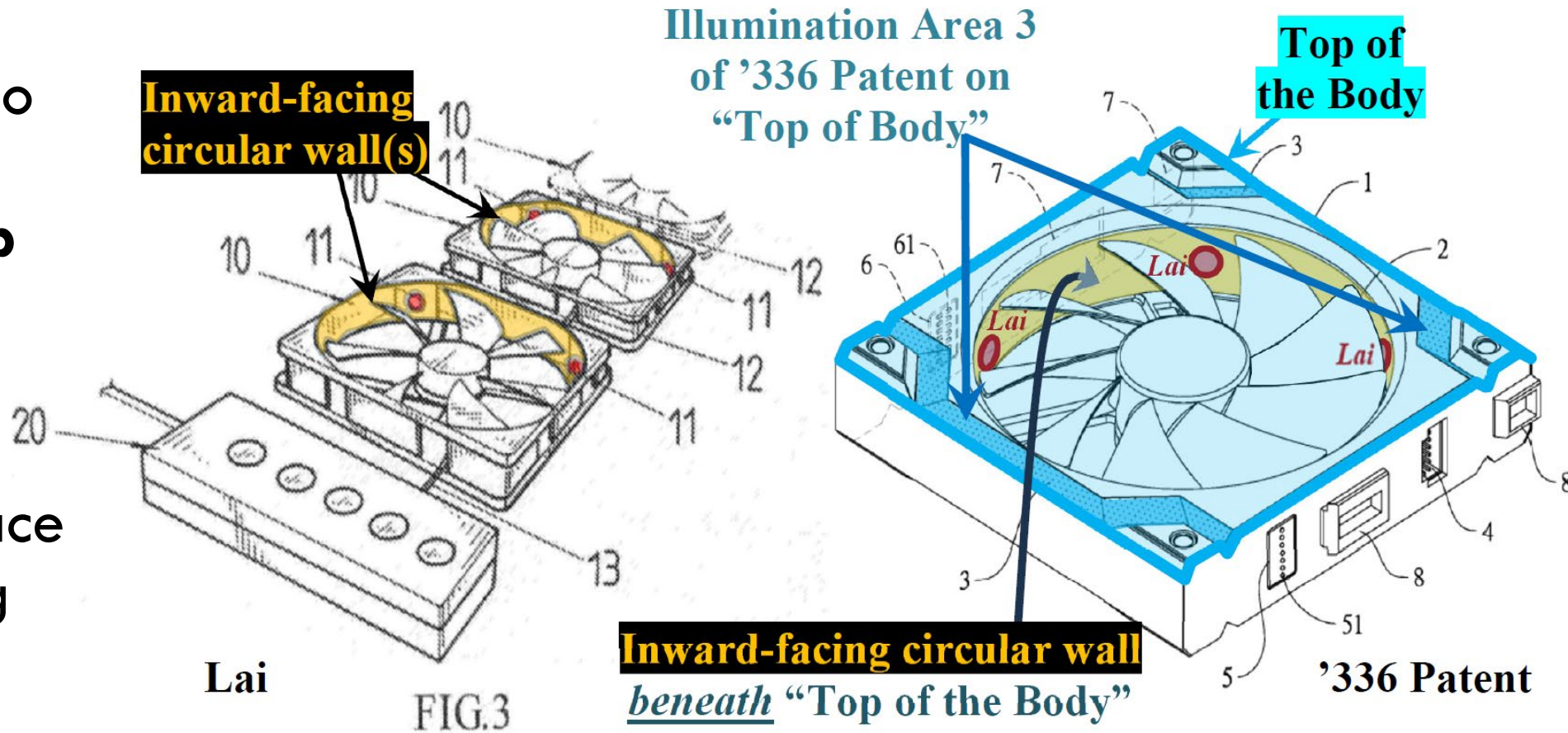
- Claim 1 requires limitation 1[b]: “**an illumination area** on at least two sides of the fan **at top of the body**” – that is, the illumination area is **located at the top of the body**, not just visible from the top of the body.



(POR [Paper 18] at 14-17; PO Reply [Paper 35] at 9-17)

NO ILLUMINATION AREA AT TOP OF LAI'S FAN BODY

- Lai teaches no “illumination area ... **at top of the body**” because Lai’s LEDs are on a different surface (inward-facing circular wall).



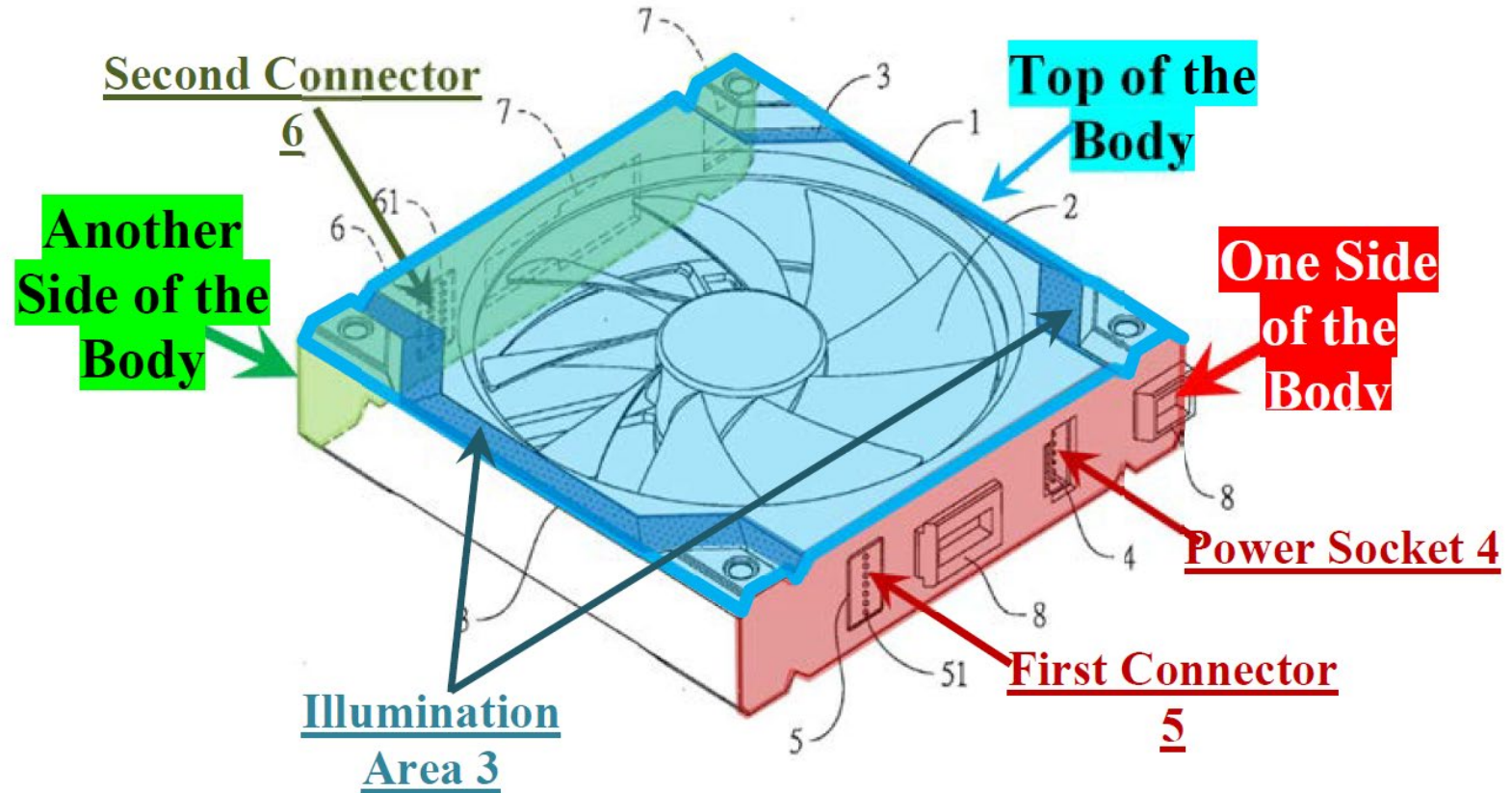
(POR [Paper 18] at 14-17; PO Reply [Paper 35] at 9-17)

Fig. 1

“SAME SIDE LIMITATION” IS IGNORED IN PETITION

- Claim 1 requires in limitations:
 - 1[c] “a power socket and a first connector on one side of the body”
 - 1[d] “the power socket on the [same] one side of the body” (“Same Side Limitation”)
 - Petition appears to have ignored this Same Side Limitation as required by limitations 1[c] and 1[d].

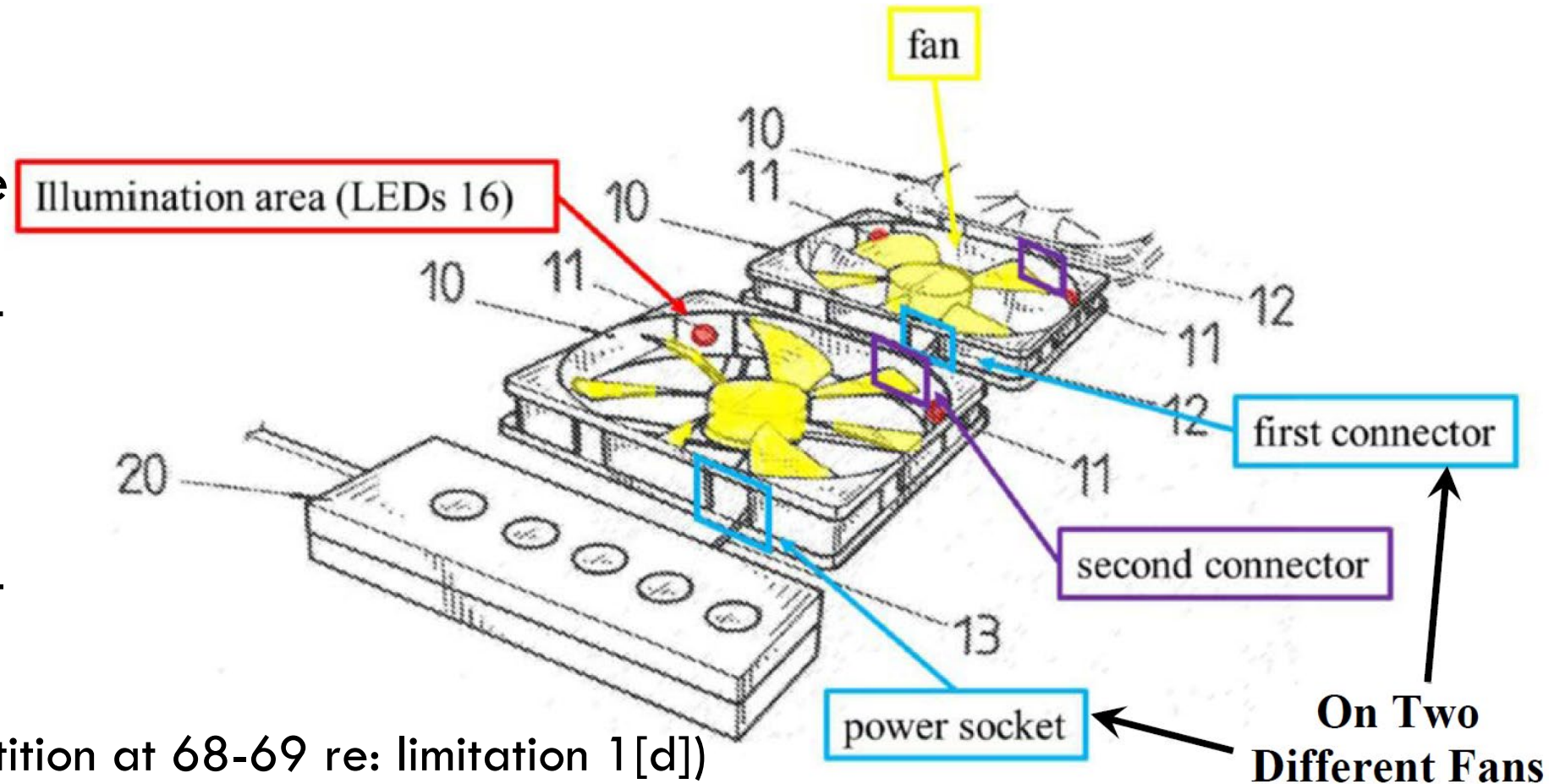
(POR [Paper 18] at 7, 10-11)



“SAME SIDE LIMITATION” IS IGNORED IN PETITION

- Petition fails to show that Lai teaches the “Same Side Limitation” in limitation 1[d] that “the power socket [is] on the [same] **one side of the body**” as the “first connector.”

(POR at 29-32; Petition at 68-69 re: limitation 1[d])

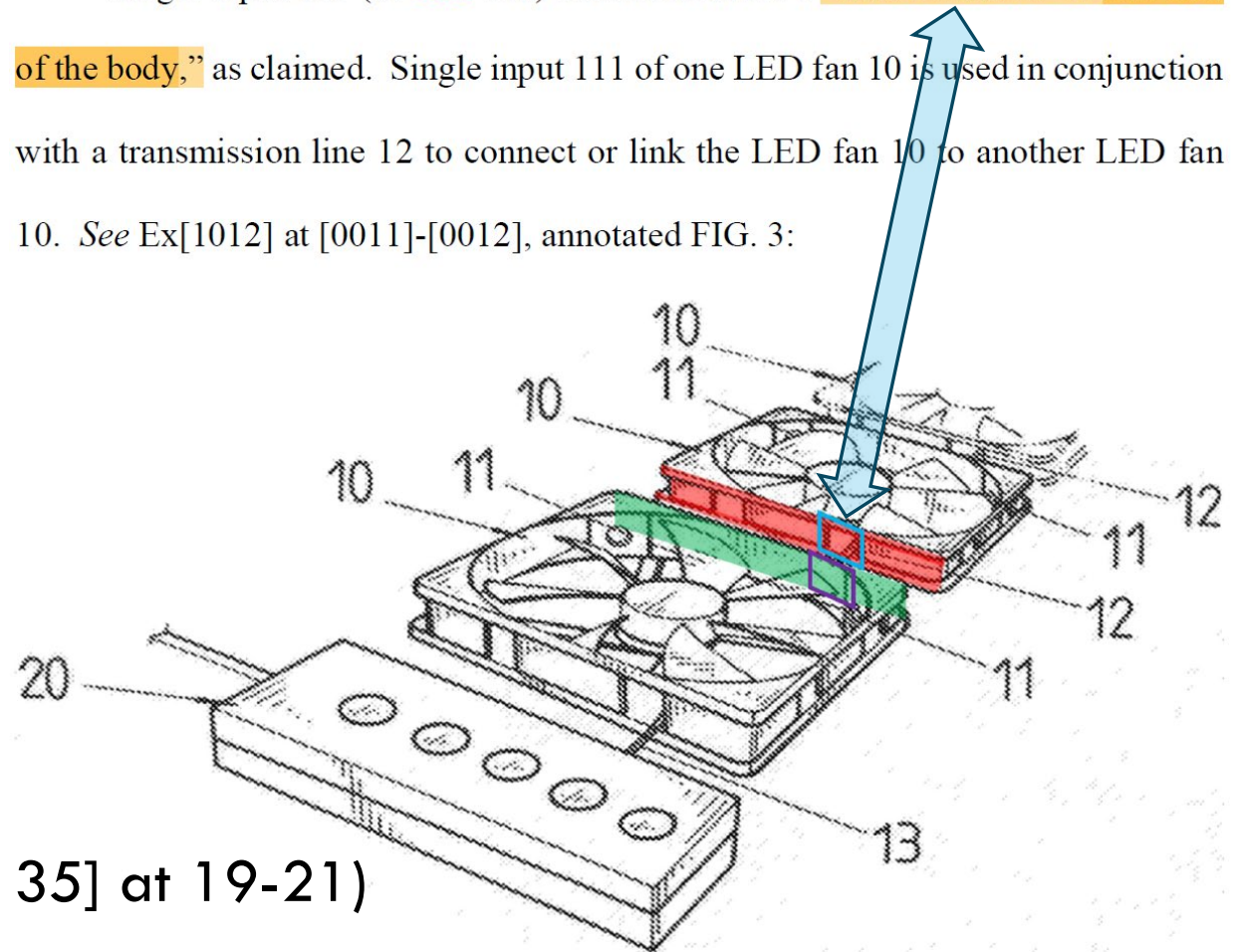


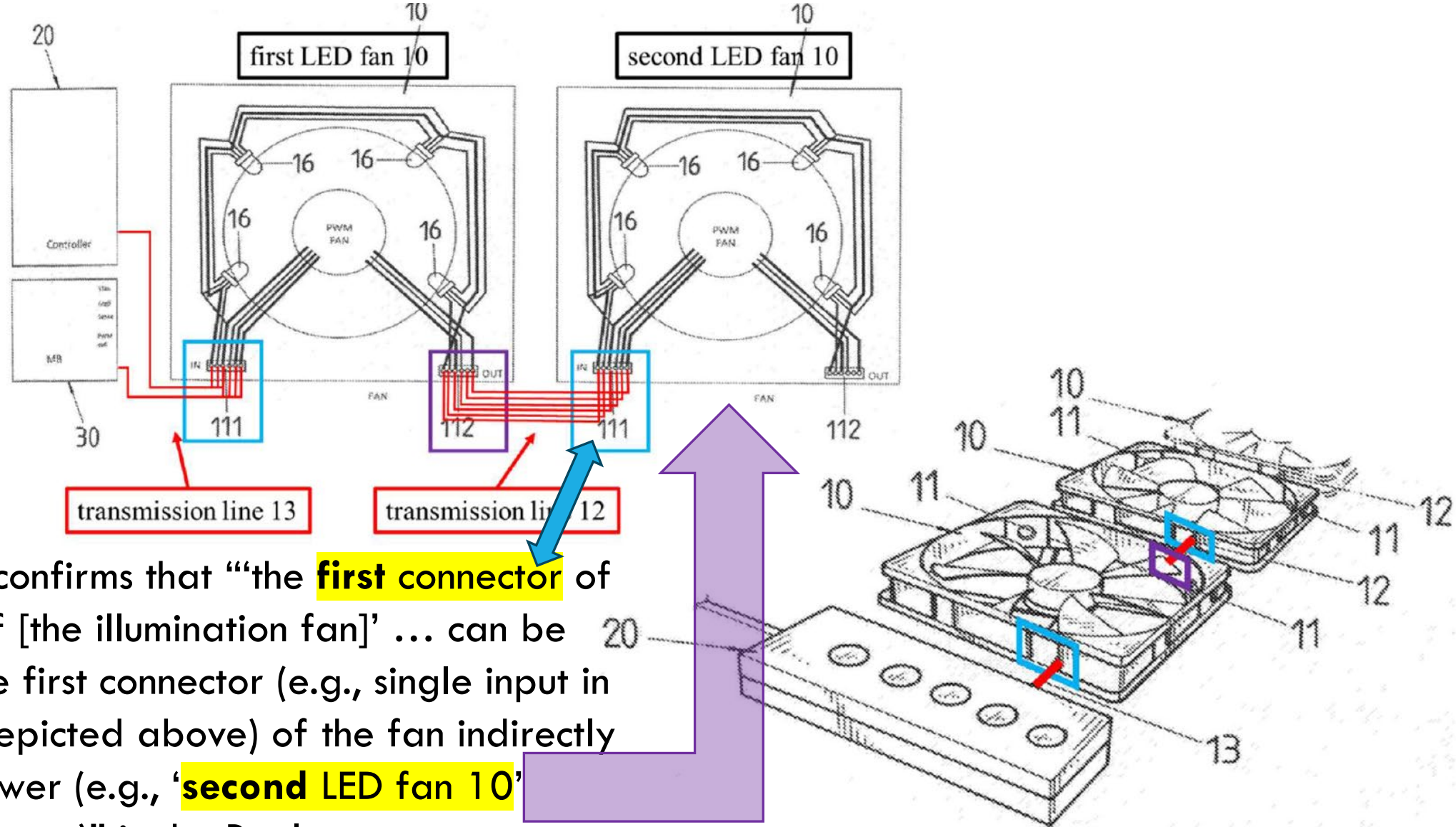
“FIRST CONNECTOR” IS ON LAI’S SECOND LED FAN

- Petitioner mapped the “**first connector on one side of the body**” in limitation 1[c] to the single input 111 on Lai’s **second** LED fan 10, which means Lai’s second LED fan 10 is the purported “illumination fan” and not the purported “another illumination fan.”

(Petition at 61; PO Sur-Reply [Paper 35] at 19-21)

Single input 111 (in blue box) further includes a “first connector on one side of the body,” as claimed. Single input 111 of one LED fan 10 is used in conjunction with a transmission line 12 to connect or link the LED fan 10 to another LED fan 10. See Ex[1012] at [0011]-[0012], annotated FIG. 3:





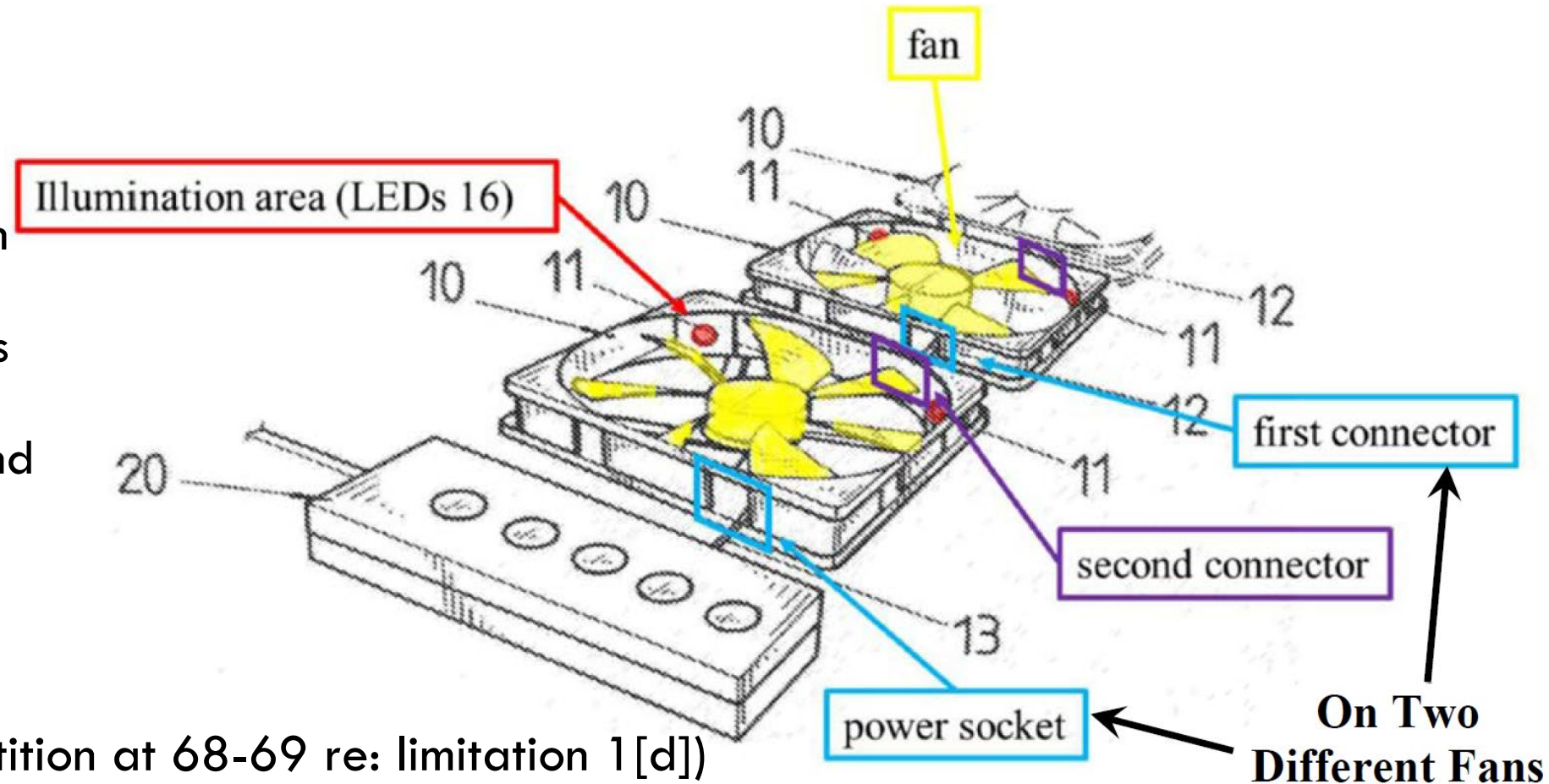
- Petitioner confirms that “the **first connector** of the body of [the illumination fan] ... can be met with the first connector (e.g., single input in **blue** box depicted above) of the fan indirectly sourcing power (e.g., ‘**second LED fan 10**’ depicted above)” in the Reply.

(Petitioner Reply [Paper 23] at 22-23)

LAI FAILS TO TEACH SAME SIDE LIMITATION IN 1[d]

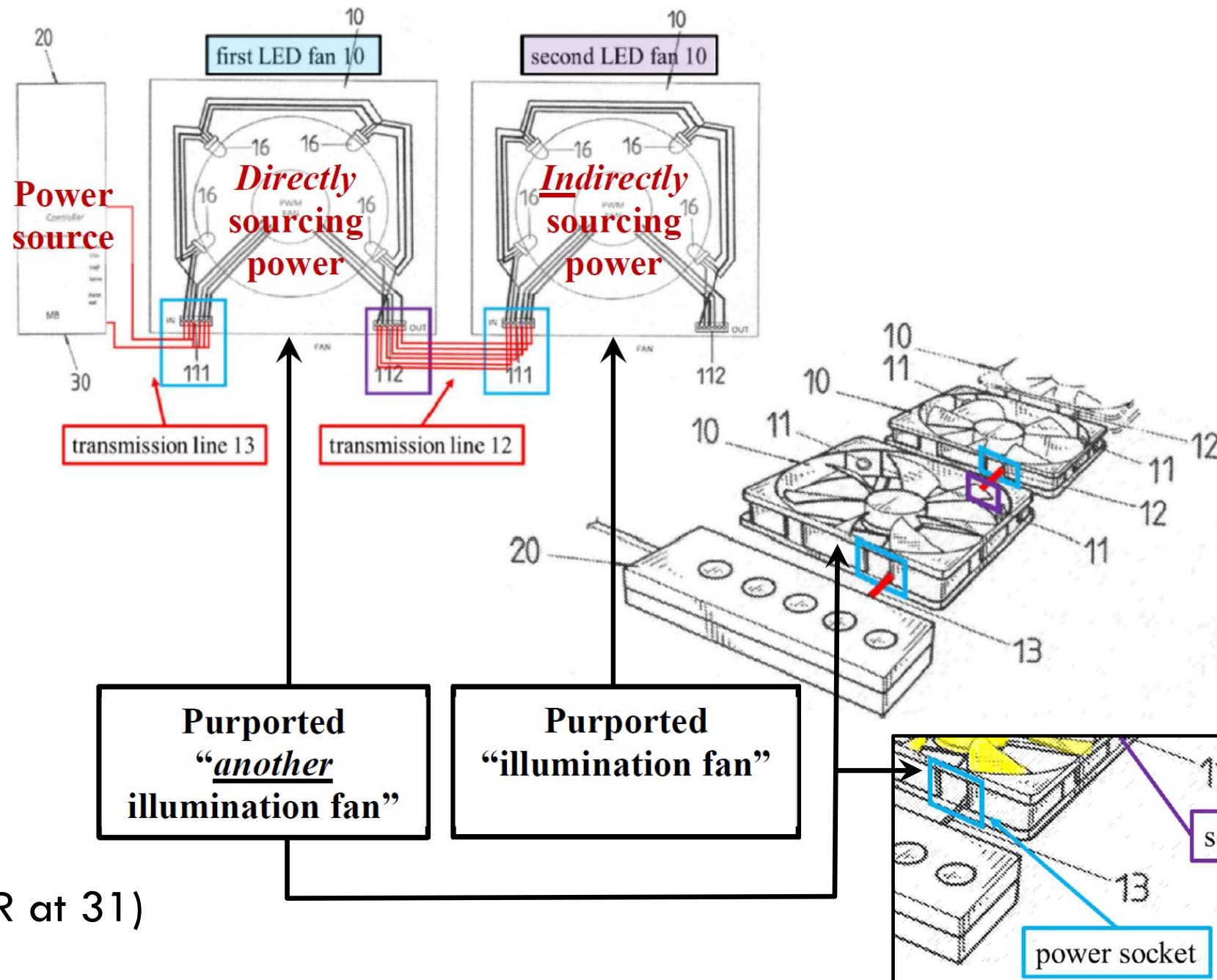
- When mapping limitation 1[d], **which has the Same Side Limitation**, the Petition maps the claimed “power socket” to Lai’s first LED fan 10 as opposed to Lai’s second LED fan 10, which is a different LED fan that the purported “first connector” is on.

(POR at 29-32; Petition at 68-69 re: limitation 1[d])



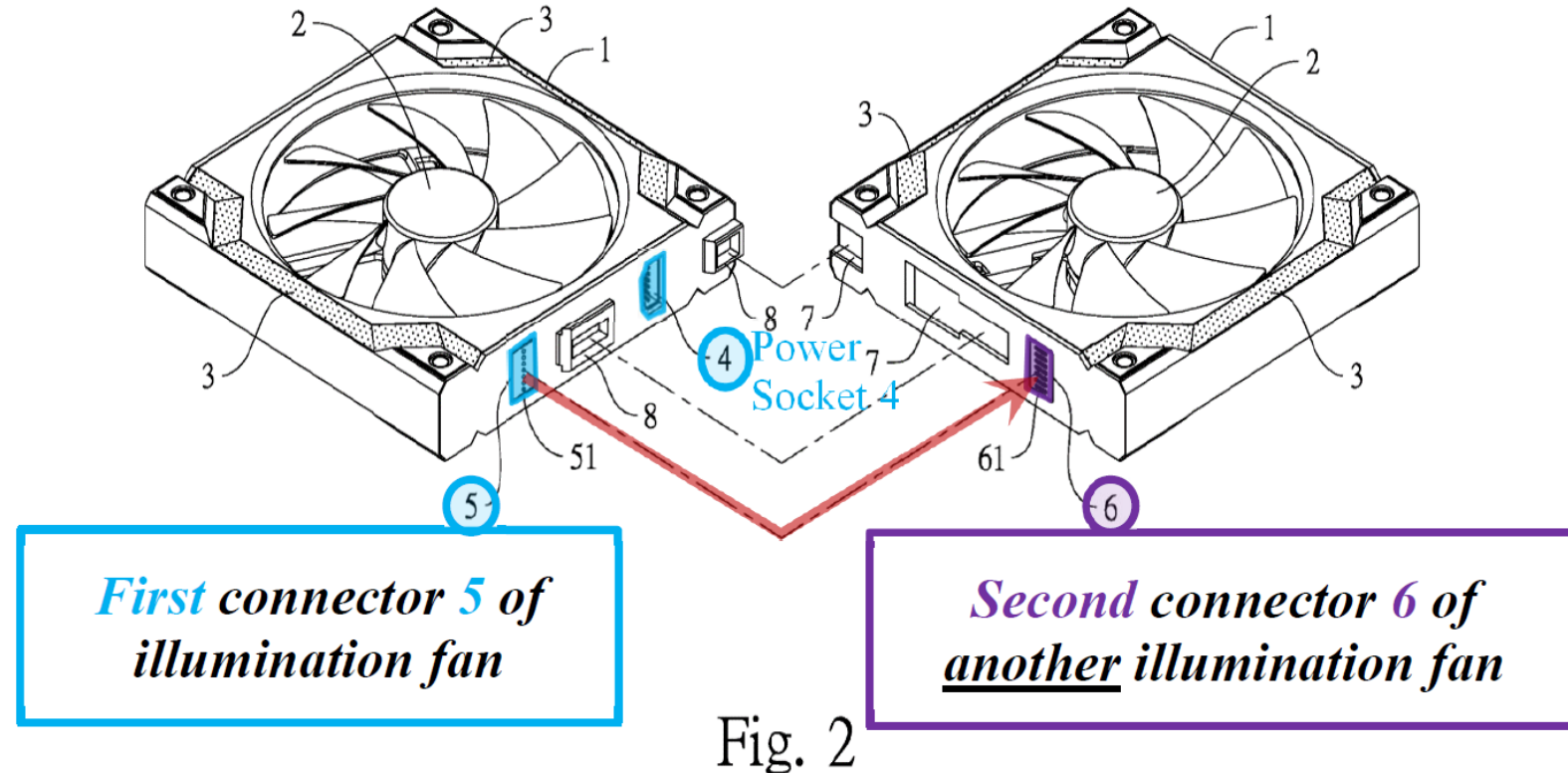
- On reply (at 22-23), Petitioner admits that it **backwardly** mapped the “second LED fan 10” in Lai as the purported “illumination fan,” and the “first LED fan 10” in Lai as the purported “another illumination fan.” Thus, “the power socket on the one side” in limitation 1[d] is mapped to the “another illumination fan,” contrary to limitation 1[d]’s language.

(PO Sur-Reply at 19; POR at 31)



CLAIMED POWER FLOW DIRECTION

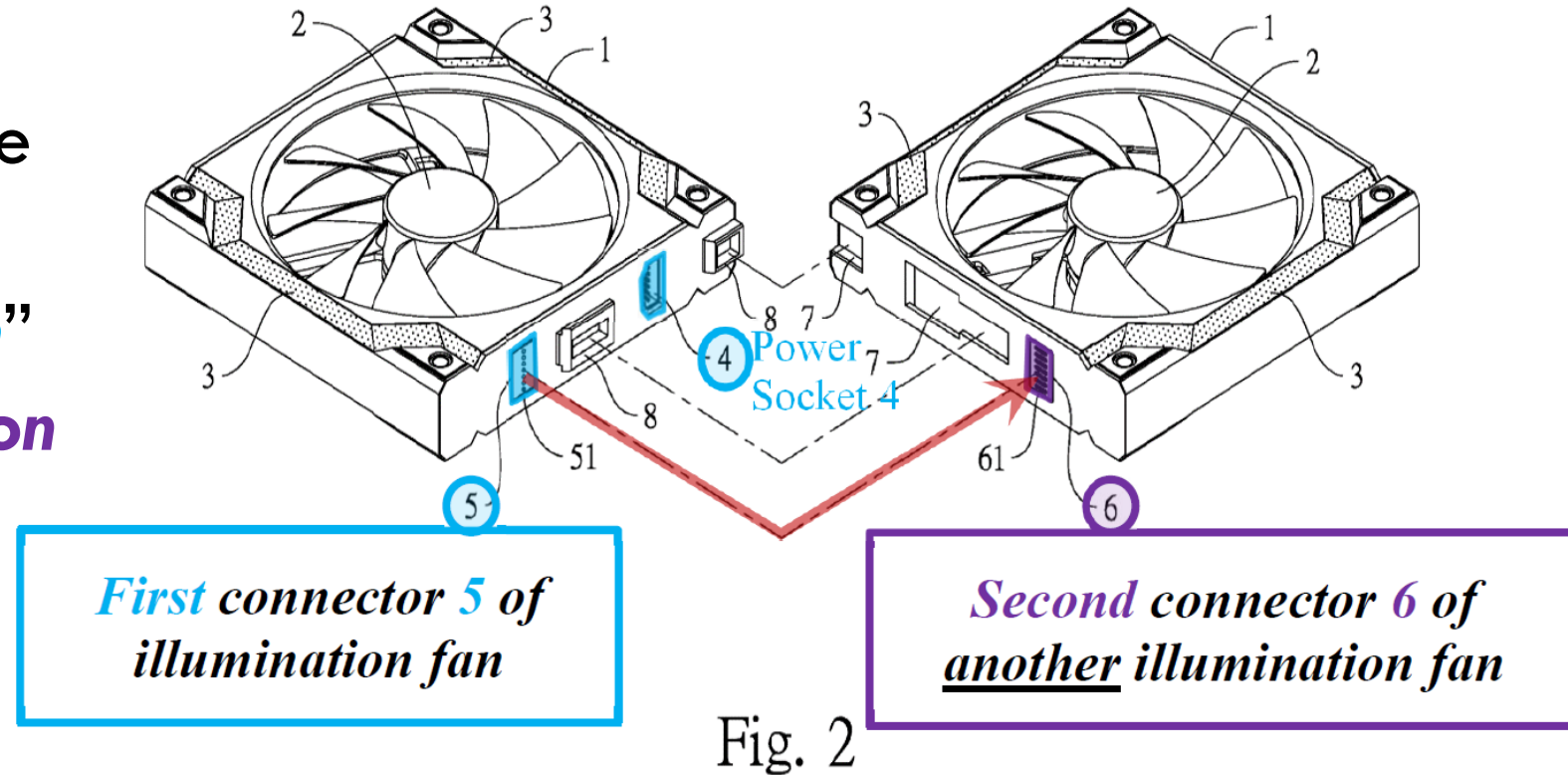
- Claim 1 requires in limitation 1[d]: “when the **first** connector of the body [of the **illumination fan**] is connected with a **second** connector of a body of **another illumination fan**, a fan and an illumination area of the body of **another illumination fan** are respectively driven into rotation and illumination.”



(POR [Paper 18] at 32-34; PO Sur-Reply [Paper 35] at 20-21)

CLAIMED POWER FLOW DIRECTION

- The implication of limitation 1[d]'s language is that the power flows from the “*illumination fan*” to the “*another illumination fan*,” not the other way around.

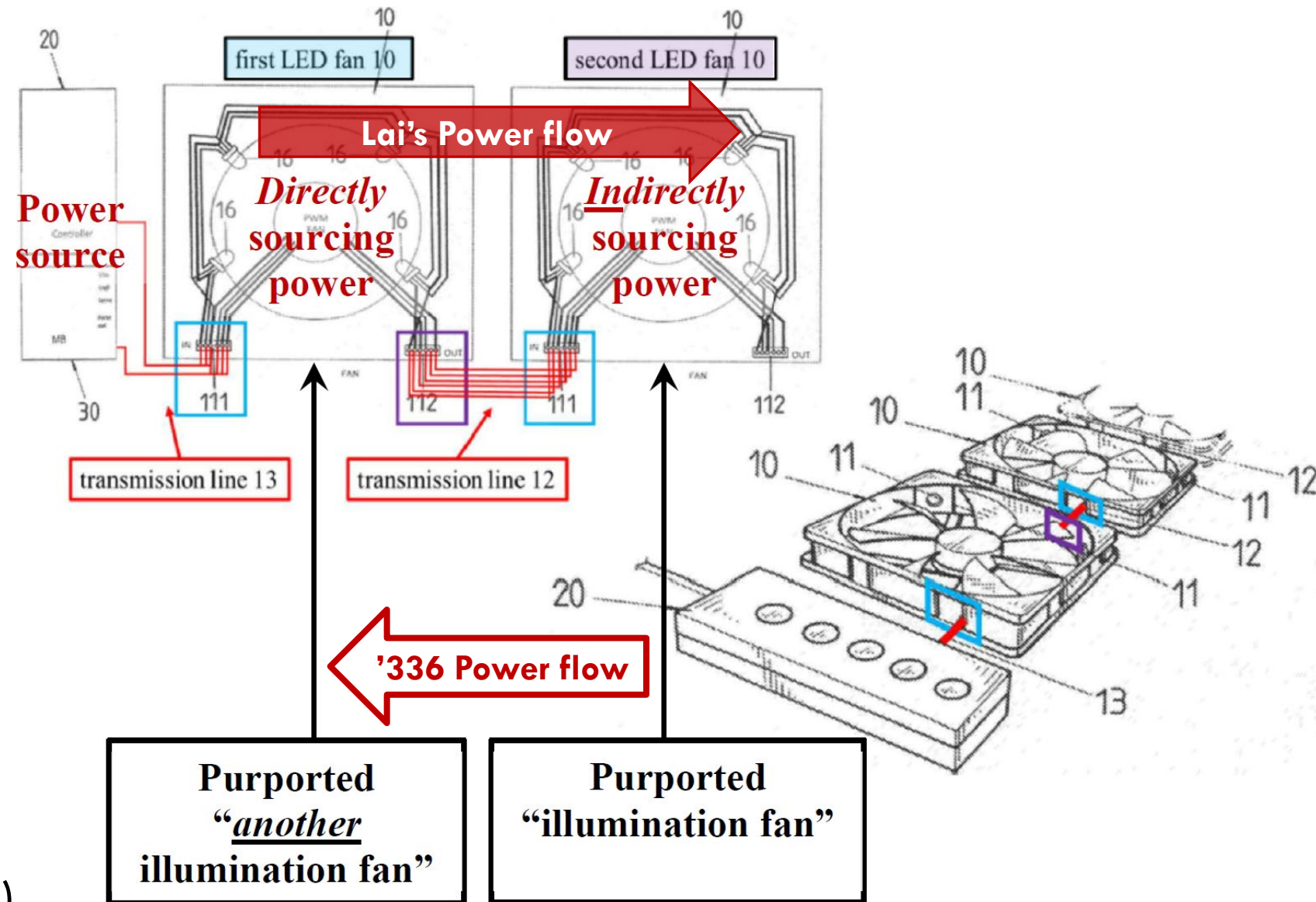


(POR [Paper 18] at 32-34; PO Sur-Reply [Paper 35] at 20-21)

- Lai's power flows from the purported "another illumination fan" to the purported "illumination fan."

- Lai's direction of power flow is, therefore, **backward** and does not meet limitation 1[d].

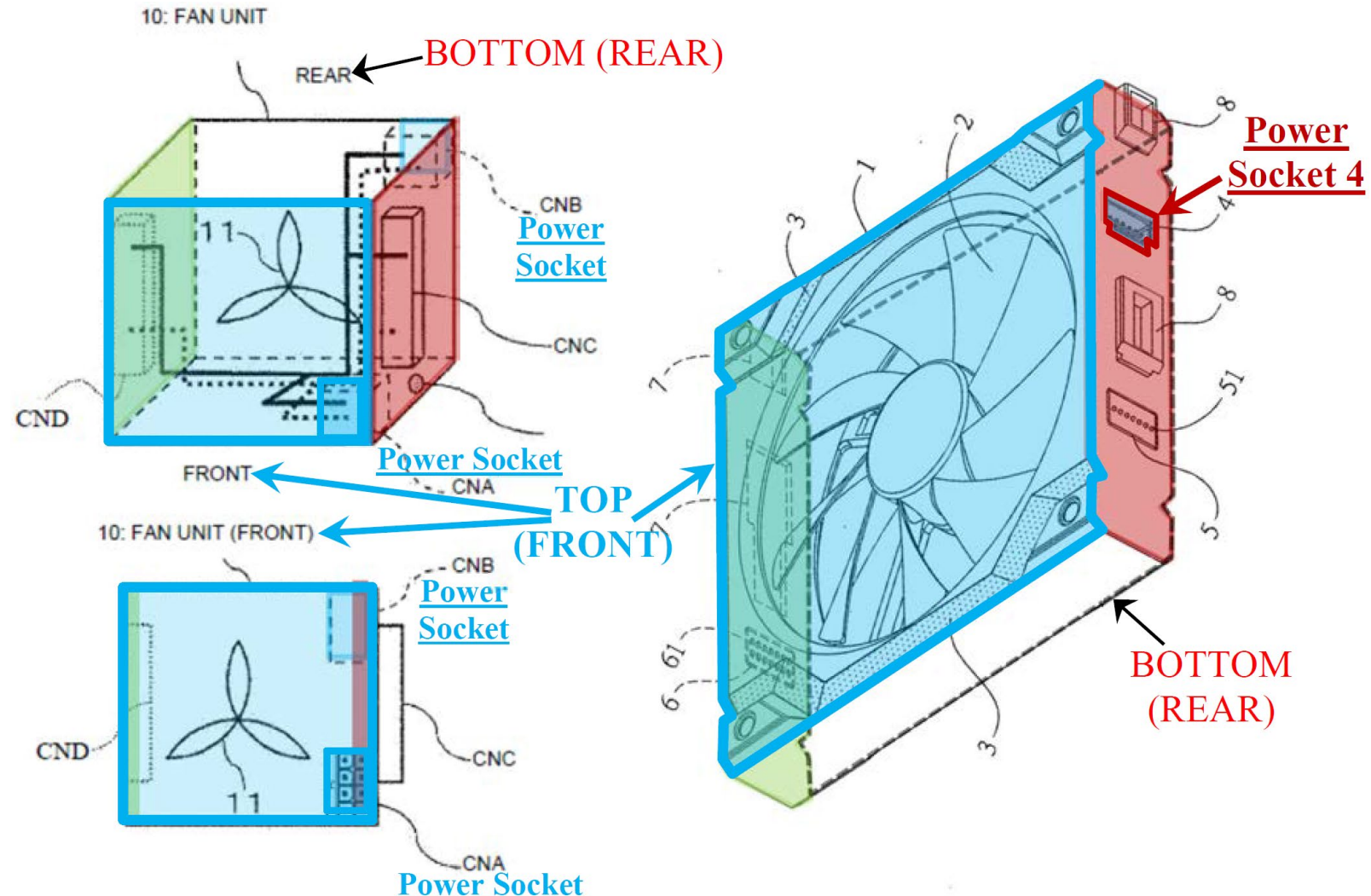
(PO Sur-Reply at 18-21)



TSUJI FAILS TO TEACH SAME SIDE LIMITATION

- Tsuji does not teach “the power socket on the [same] **one side of the body**” as the “first connector” as required in limitations 1[c] and 1[d].

(POR [Paper 18] at 39-44)

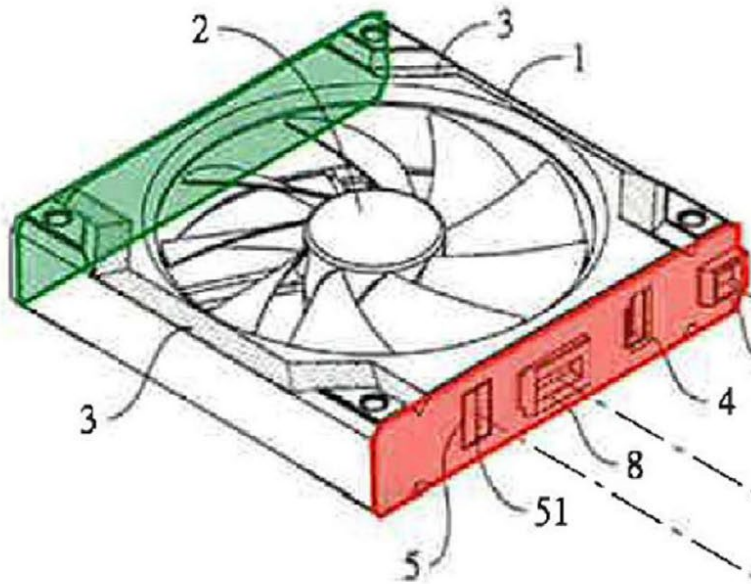


NEW “SIDE” THEORY SHOULD BE REJECTED

- Petitioner never argued in Petition that Tsuji met the Same Side Limitation.
- On **Reply**, Petitioner **belatedly** invented a new theory based on “side,” which should be rejected.

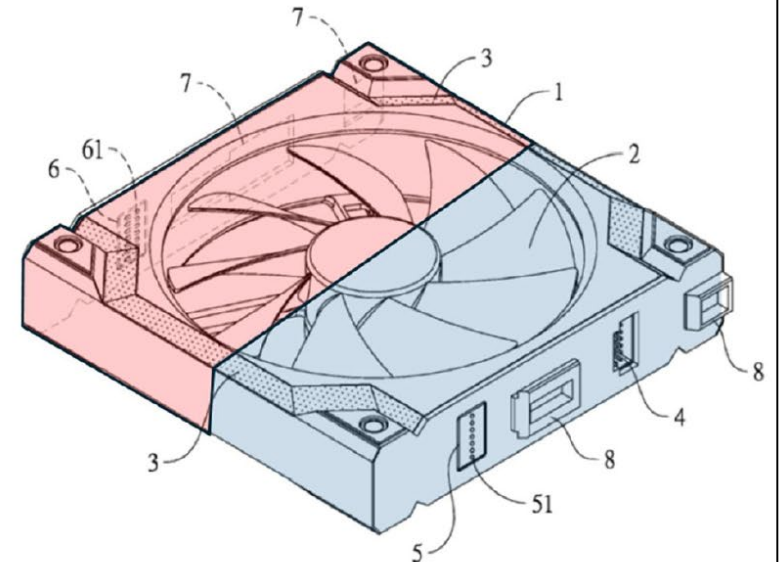
(PO Sur-Reply at 25-30)

Petition (at 9): “a first side [is] highlighted in **red** and a second side highlighted in **green**” (italics and colors original).



(Petition at 9 (excerpt).)

Reply (at 10): “The left side (in **red**) is a place, space or direction with respect to a center or a line of division as is the right side (in **blue**).”

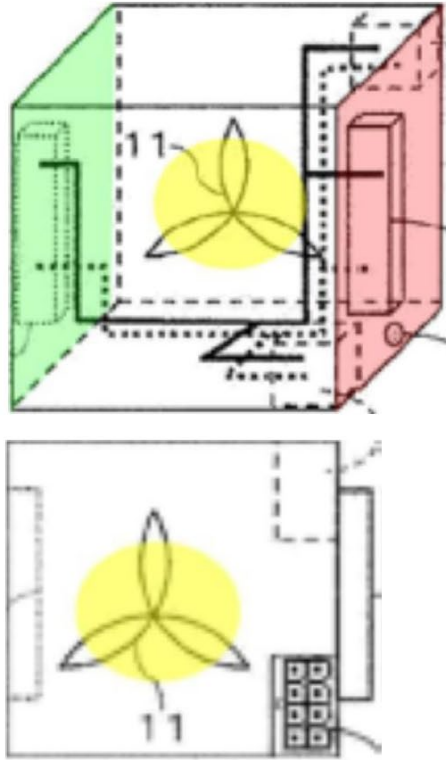


(Reply at 10.)

NEW TSUJI “SIDE” THEORY SHOULD BE REJECTED

- Petitioner made no argument on Same Side Limitation re: Tsuji in Petition (at 32-39), but on Reply (at 24) belatedly argued for the 1st time that Tsuji met Same Side Limitation under new “side” theory.

(PO Sur-Reply at 25-30)

“Side(s) of the body” of Tsuji in Petition	“Side(s) of the body” of Tsuji in Reply
 (Petition at 34 (excerpt).)	 (Reply at 25 (excerpt).)

NO EXPERT SUPPORT FOR NEW TSUJI “SIDE” THEORY

- The Reply (at 24-25) cites to ¶¶ 68 & 70 of Dr. Wolfe’s Reply Declaration (Ex-1031) as support for new “side” mappings re: Tsuji, yet such new mappings are not included in Dr. Wolfe’s original or reply declarations (i.e., Ex-1004 and Ex-1031, respectively).

(PO Sur-Reply at 25-30)

Q. On page 25 of Exhibit 2029, which is Petitioner’s Reply to Patent Owner’s Response to Petition, do you see a figure colored in red, green and yellow?

A. Yes.

Q. Did you provide this exact same figure in your Reply Declaration, which is Exhibit 1031?

A. I don’t recall.

Q. **Did you provide this exact figure in your original Declaration, which is Exhibit 1004?**

A. **No.**

(Ex-2051 (Wolfe Tr.) at 118:10-25 (emphasis added).)

NEW “SIDE” THEORY IS MERITLESS

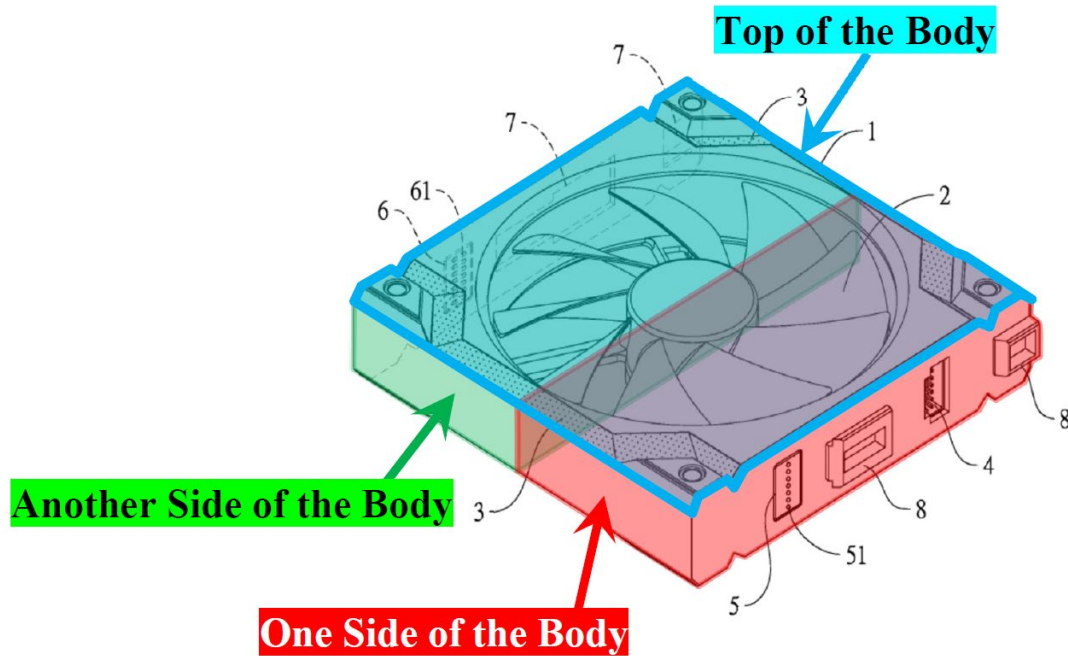


Fig. 1

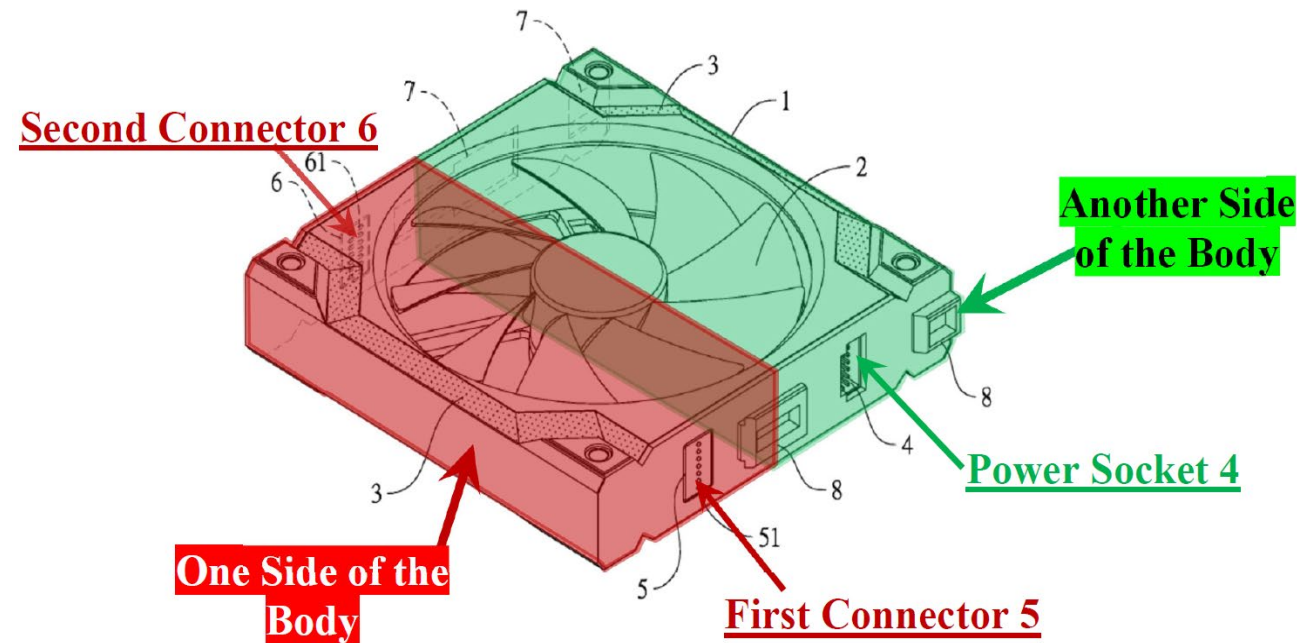


Fig. 1

(PO Sur-Reply at 4-7 (citing *Kaufman v. Microsoft*, 34 F.4th 1360, 1372 (Fed. Cir. 2022)))

NEW “SIDE” THEORY IS MERITLESS

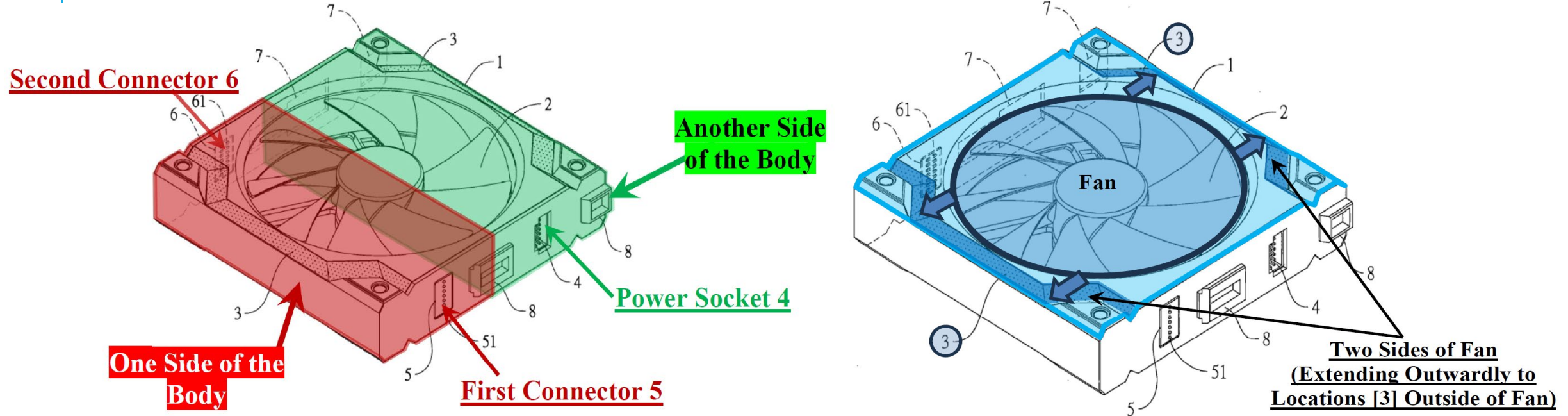


Fig. 1

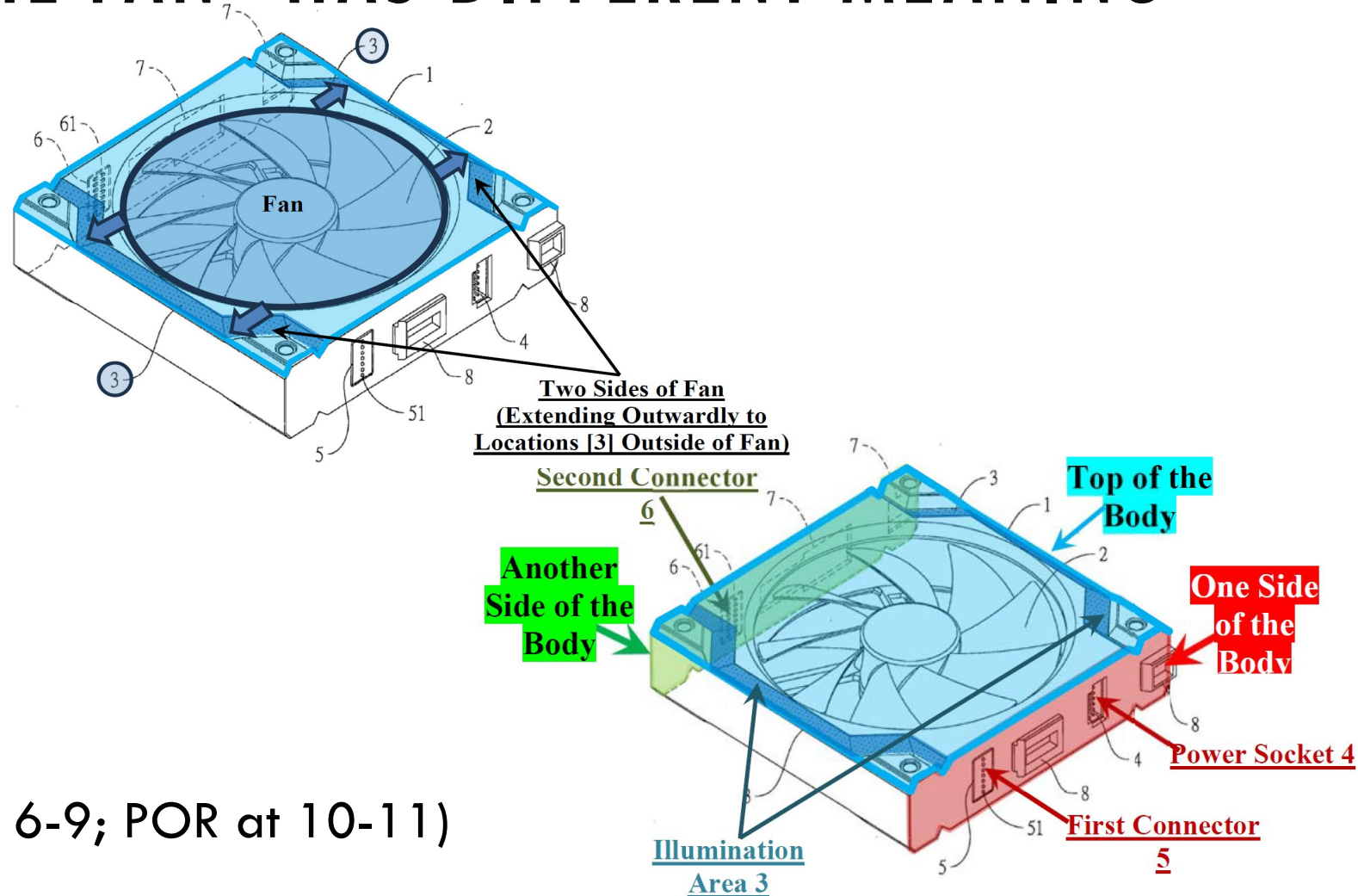
Ex-2051 (Wolfe Tr.), 135:11-12 (“In Figure 1 illumination area 3 is *not part of fan 2*. It is *to the left and to the right of fan 2*.”) and 135:23-25 (“Illumination area 3 is *not part of fan 2* in Figure 1. It is illustrated as being *to the left and to the right of fan 2*.”).)

(PO Sur-Reply [Paper 35] at 5-9)

“TWO SIDES OF THE FAN” HAS DIFFERENT MEANING

The “two sides of the fan” that are admittedly ***not part of*** nor ***on*** the fan should be construed differently than the “side[s] of the body” that are ***part of*** and ***on*** the body.

(PO Sur-Reply [Paper 35] at 6-9; POR at 10-11)

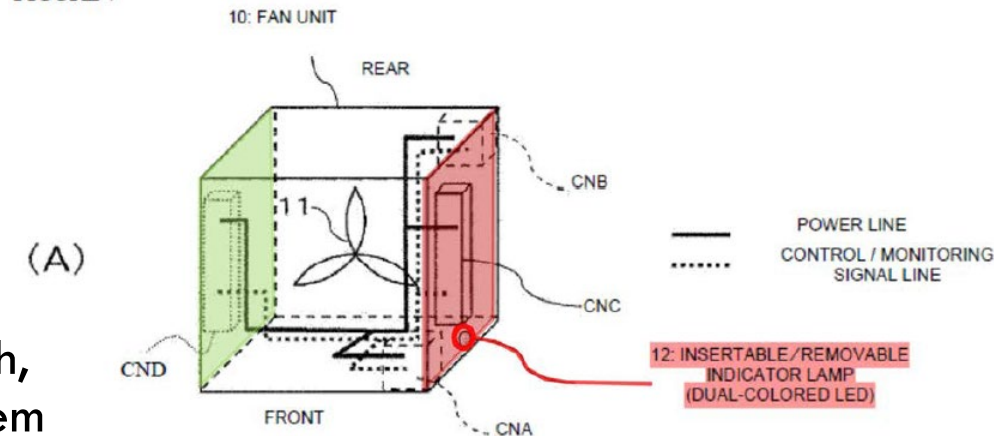


HUANG IS NOT COMBINABLE WITH TSUJI

- Tsuji's primary objective is cooling computers in a server room where seldom anyone goes but for maintenance related reasons.
- Inclusion of more lamps or any other lighting or illumination elements would have conveyed no benefit and would only have added costs and energy consumption as well as heat generation that a POSITA would have strived to avoid. Ex-2006, ¶¶ 86-87; see *also* Ex-2002, ¶ 70.
- Thus, a POSITA would not have added fancy illumination through, e.g., translucent fan bodies such as that in Huang to the Tsuji system because such illumination adds only heat and costs to the hot-swapping system with no discernable benefits and only harms. Ex-2006, ¶¶ 86-87.

(POR [Paper 18] at 47-49)

FIGURE 7

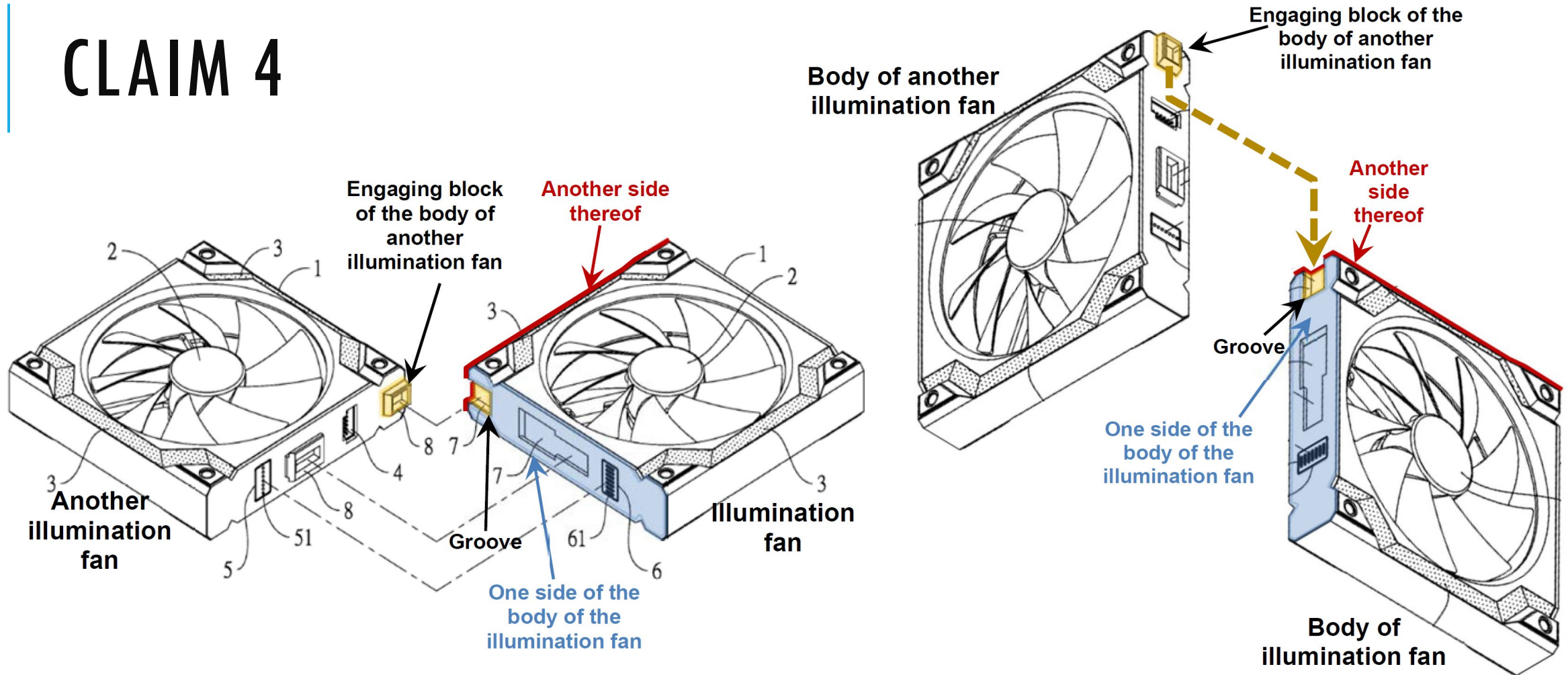


CLAIM 4

- “4. The illumination fan connectable with at least one illumination fan for a computer of claim 1, wherein a groove is provided on one side of the body of the illumination fan, while an engaging block is provided on another side thereof to be engaged into the groove, such that when the groove of the body of the illumination fan is engaged with the engaging block of the body of another illumination fan, the body of the illumination fan is connected with the body of another illumination fan.”

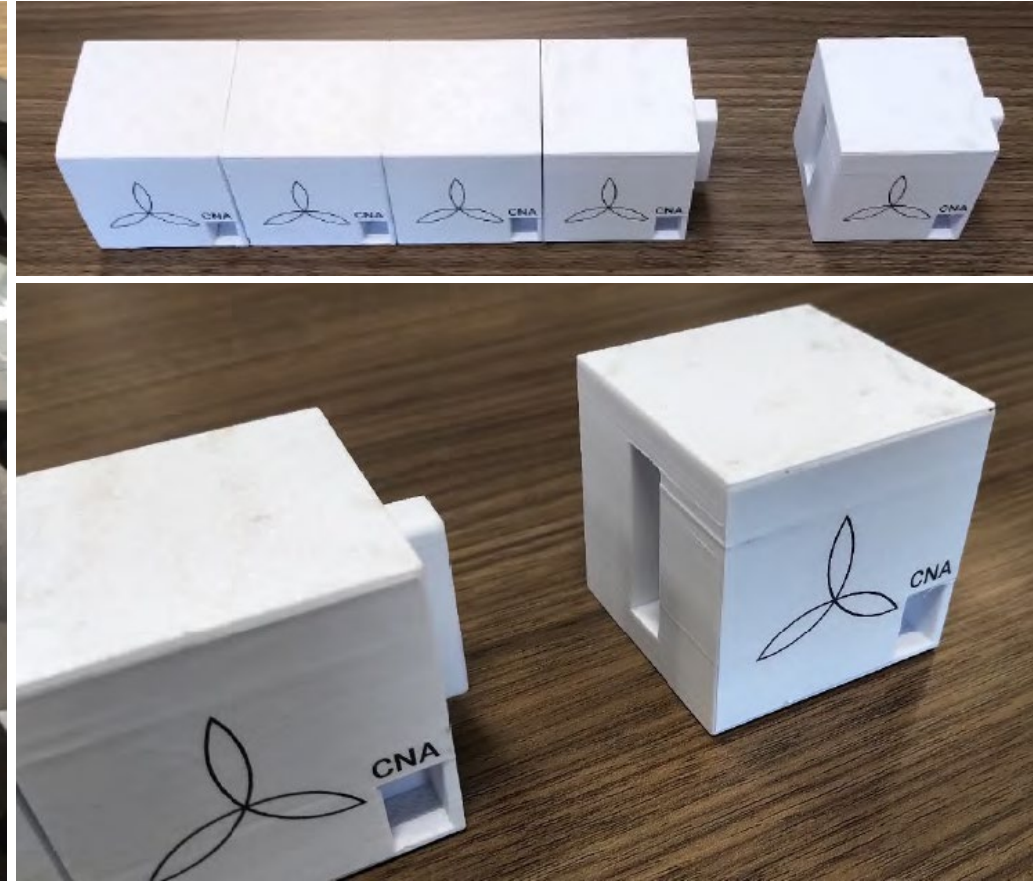
(’336 Patent, Cl. 4)

CLAIM 4



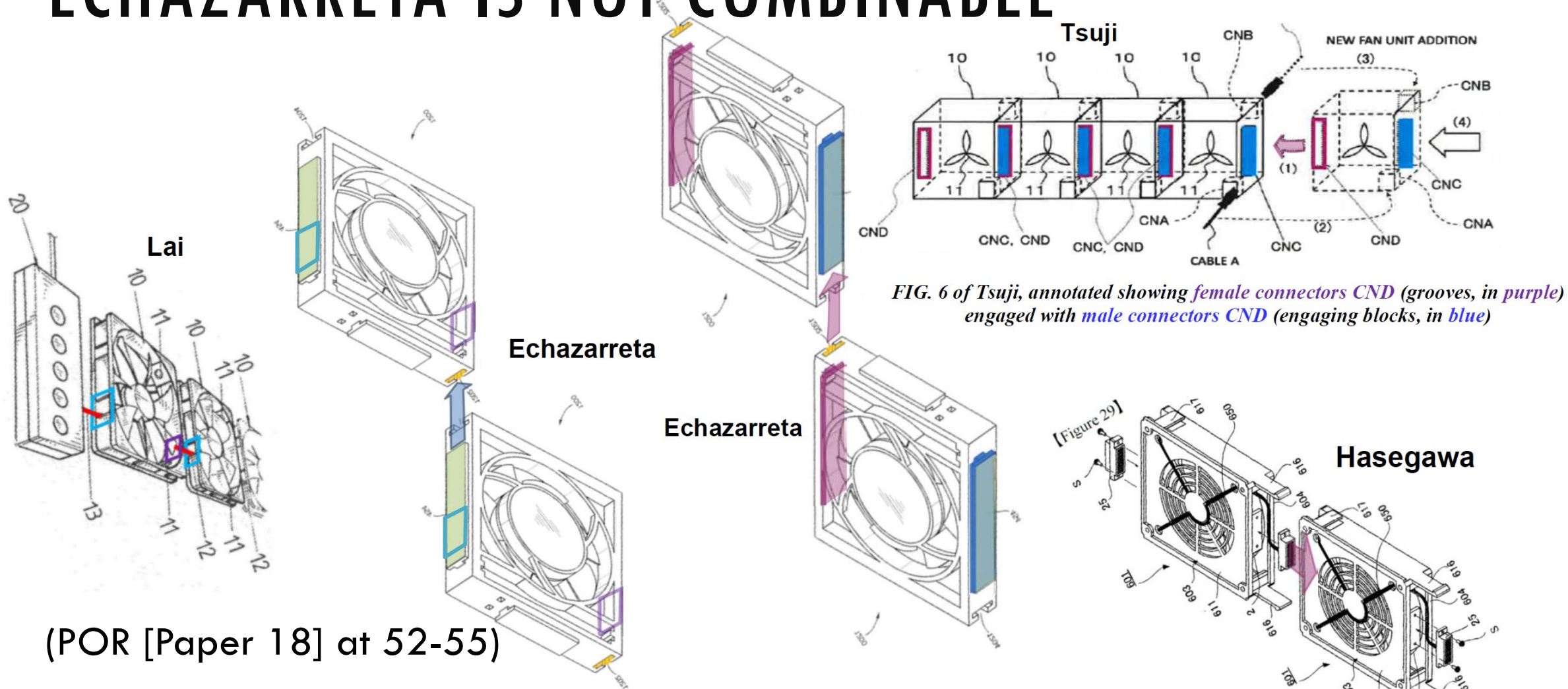
(POR at 49-52) Fig. 2

CLAIM 4 RELATED DEVICES AND TSUJI MODELS



(Ex-2006 at Appendices C and B)

ECHAZARRETA IS NOT COMBINABLE



(POR [Paper 18] at 52-55)

CLAIM 5

- “5. The illumination fan connectable with at least one illumination fan for a computer of claim 1, wherein a groove is provided on **two sides of the body** of the illumination fan, and the body of the illumination fan is connected with the body of another illumination fan by respectively engaging an engaging block with one of the grooves on the **sides of the body** of the illumination fan and one of the grooves on the **sides of the body** of another illumination fan.”

(’336 Patent, Cl. 5)

CLAIM 5

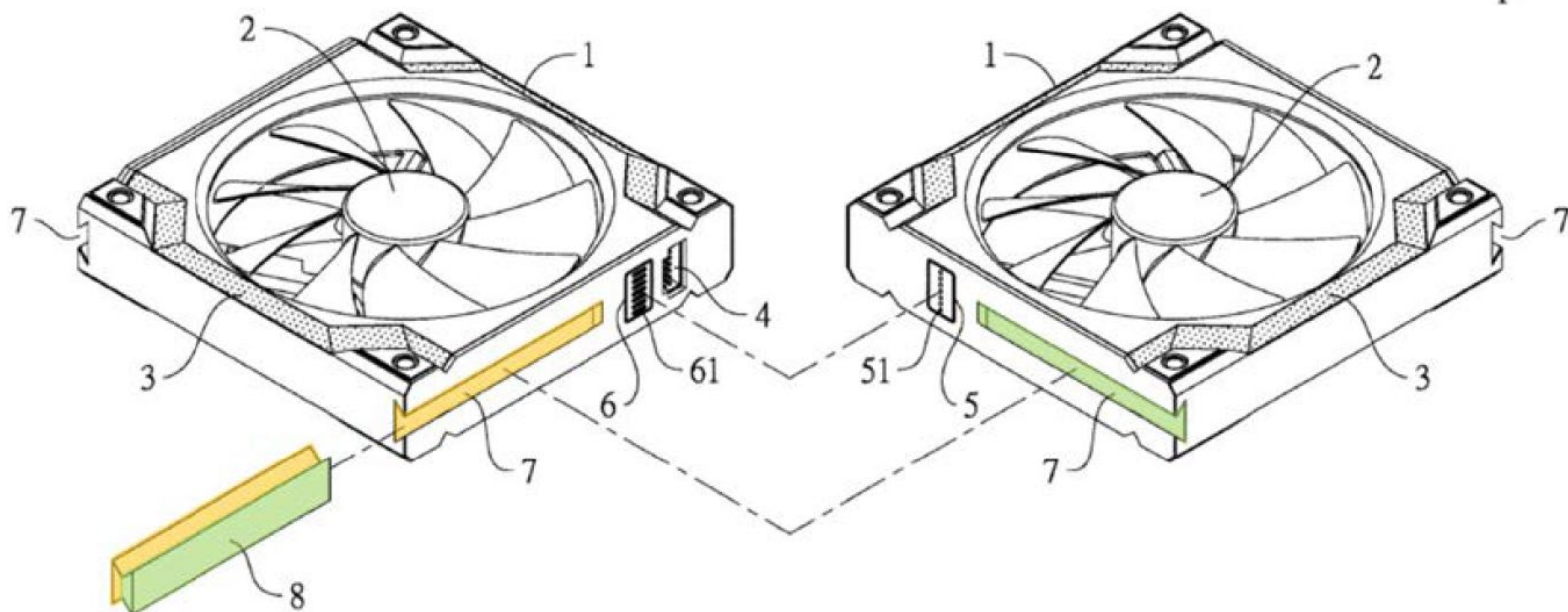
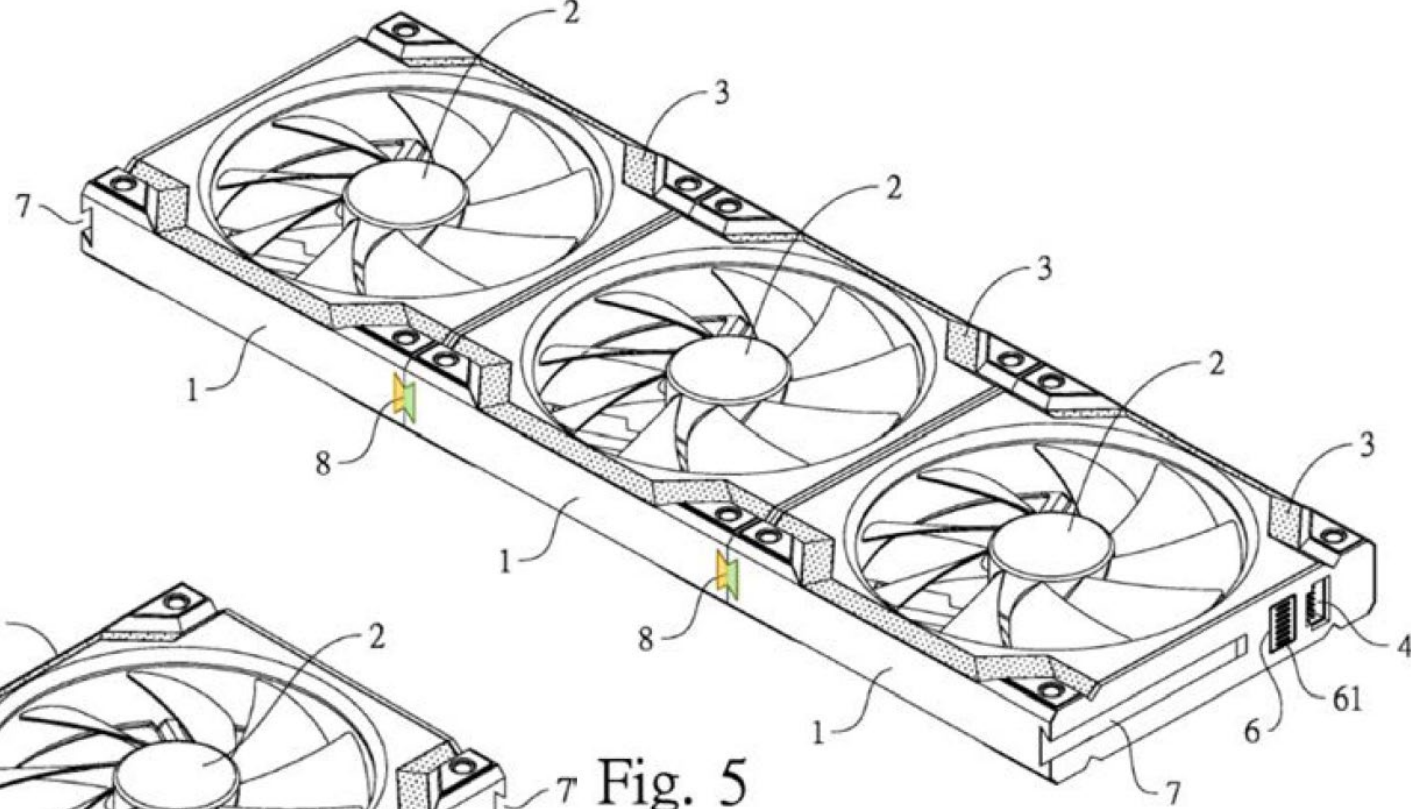


Fig. 4

(POR at 56-57)

NEITHER CHOU NOR LIU TEACHES CLAIM 5

- Chou and Liu both teach fan connections on the **tops/bottoms** of fan bodies, **not** on the **sides** like claim 5.

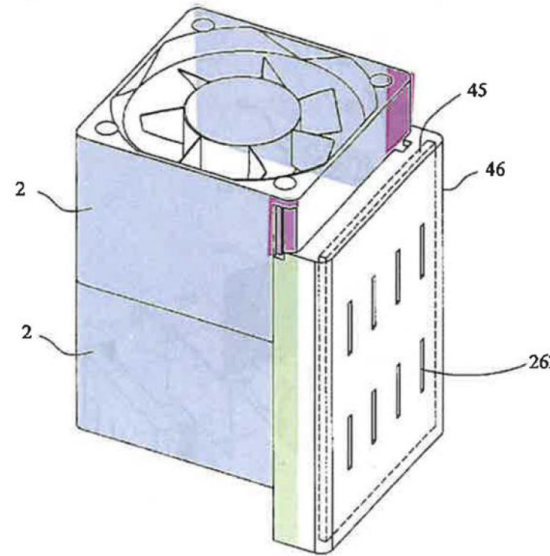
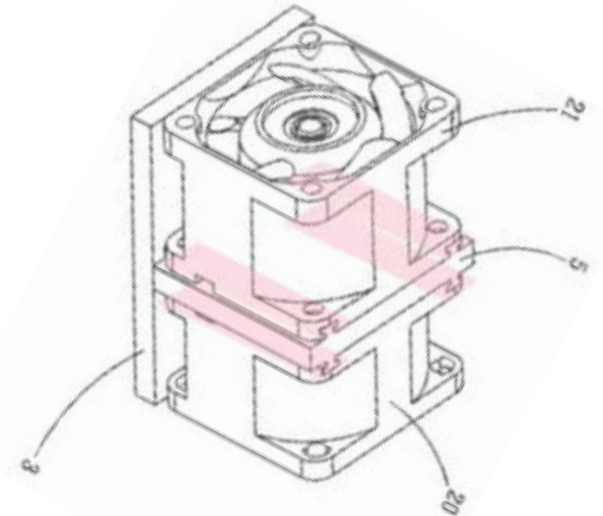


FIG. 4 of Chou, annotated



Liu

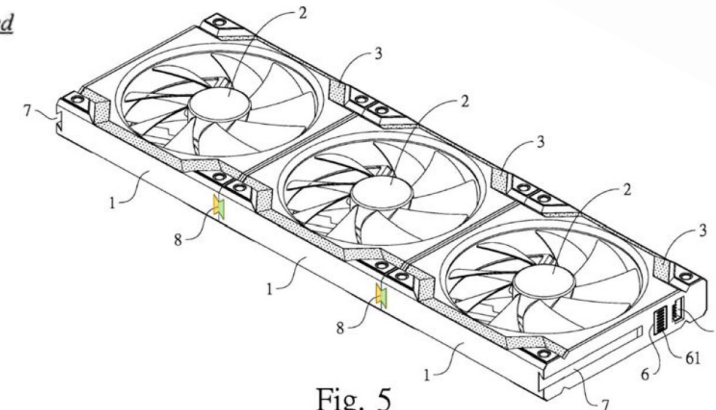
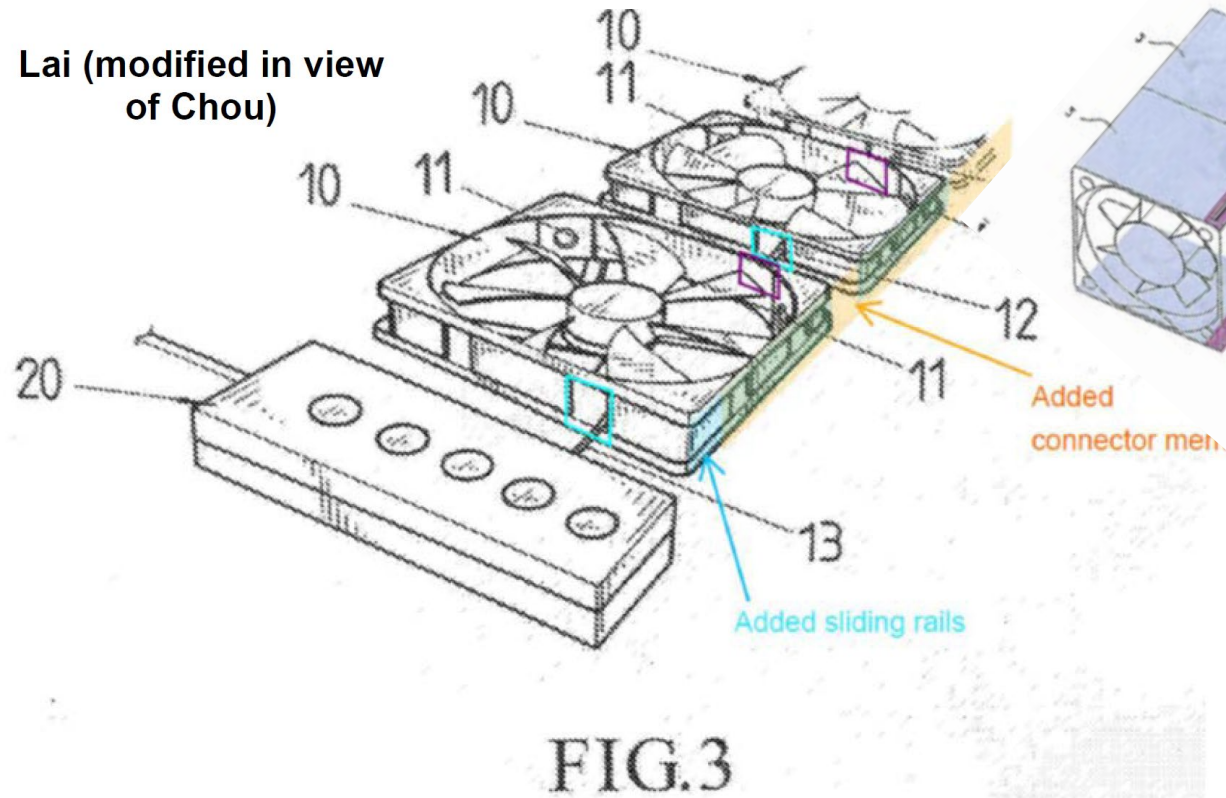


Fig. 5

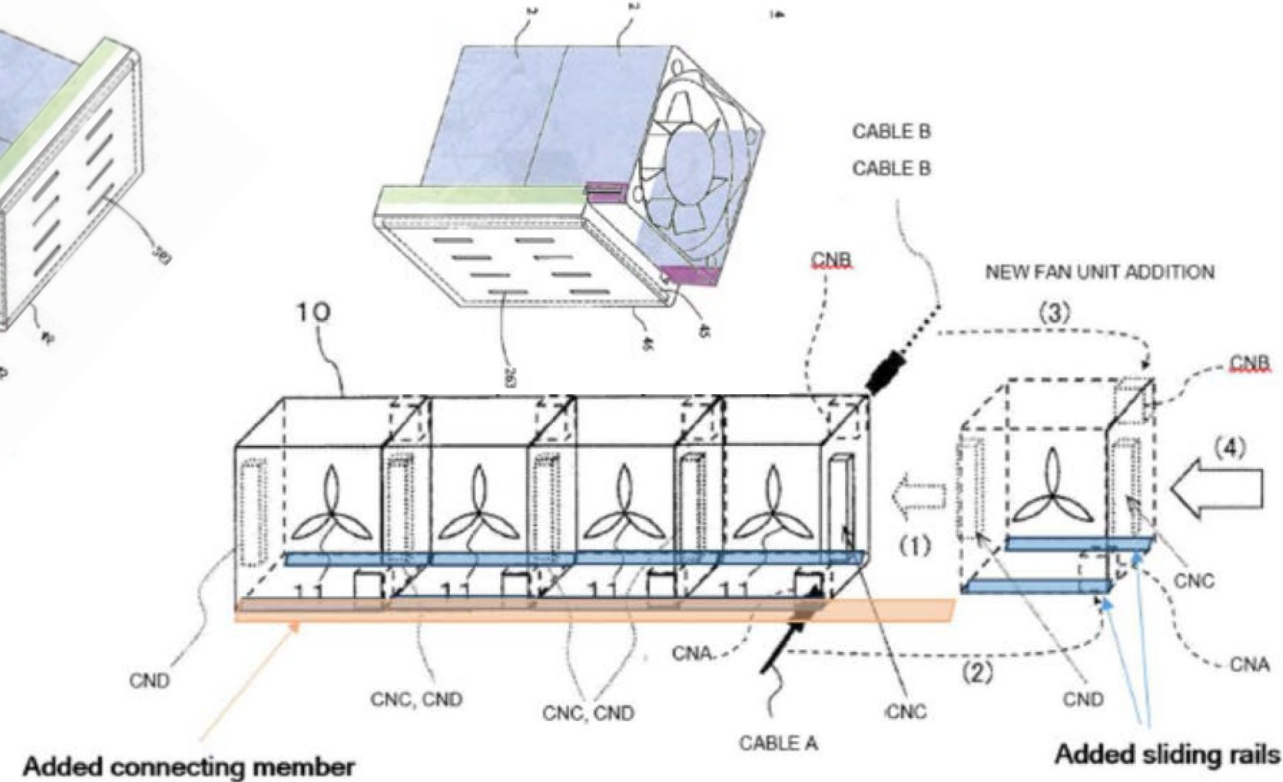
(POR [Paper 18] at 57-59, 65)

CHOU IS NOT COMBINABLE TO TEACH CLAIM 5



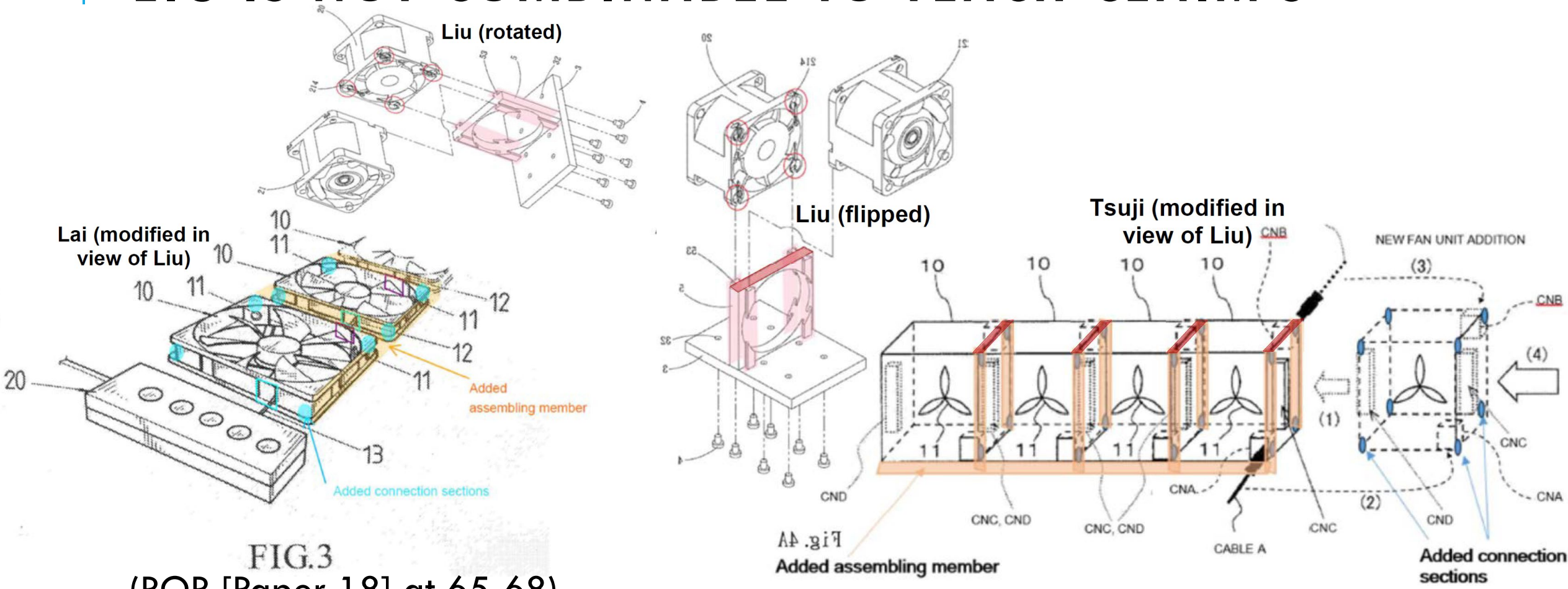
(POR [Paper 18] at 58-65)

Slide No. 34

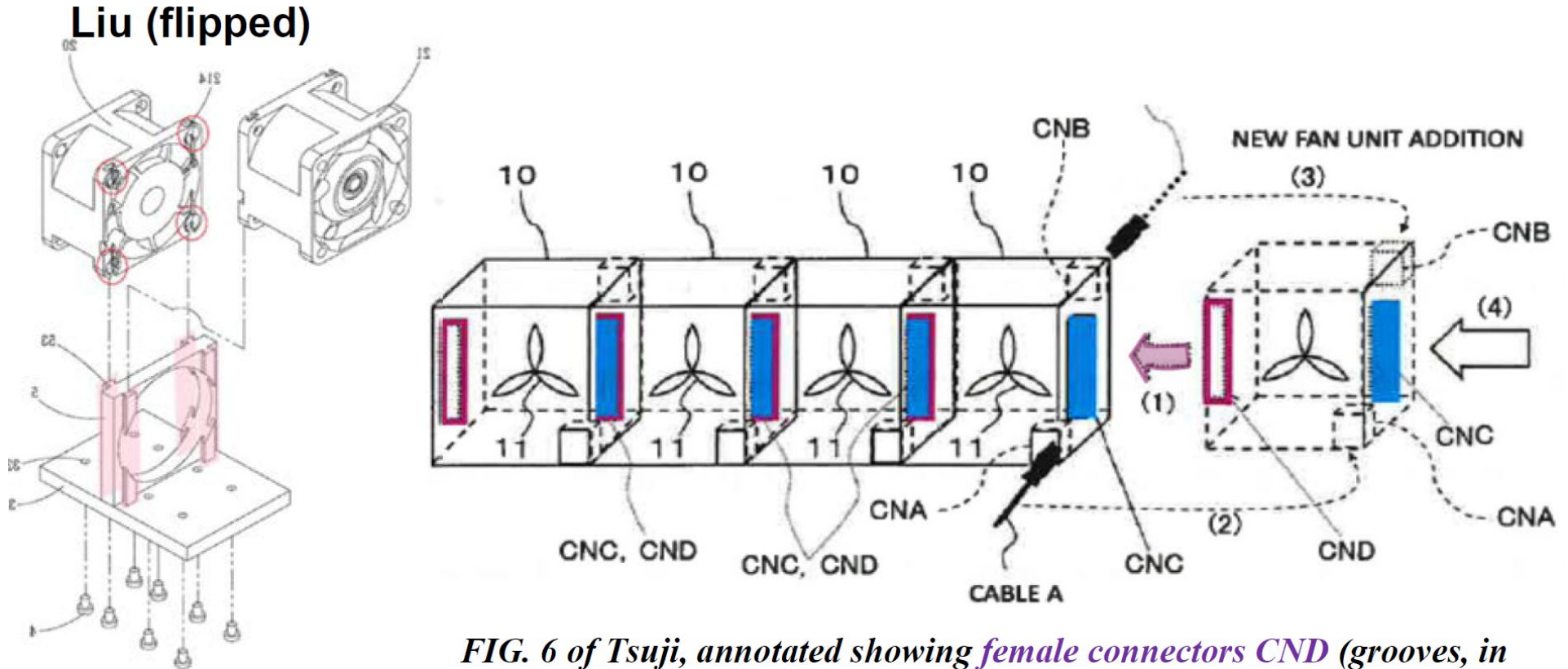


DEMONSTRATIVE EXHIBIT — NOT EVIDENCE 12/11/2025

LIU IS NOT COMBINABLE TO TEACH CLAIM 5



LIU IS NOT COMBINABLE TO TEACH CLAIM 5



(POR at 67-69) Fig. 4

REVISED MOTION TO AMEND (RMTA) DISPUTES

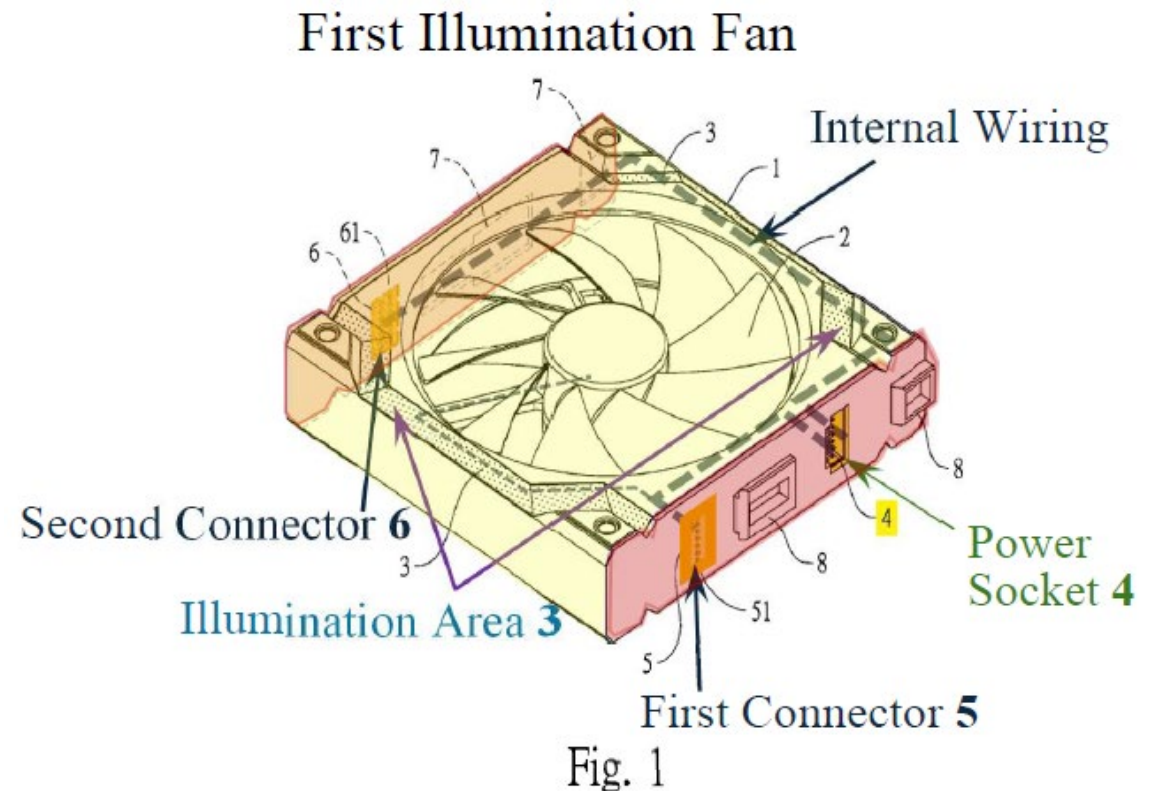
- Whether limitations (B) and (C) are supported and definite
- Whether “illumination area” and “flat surface” are supported
- Whether Petitioner met its burden to show invalidity
- Whether prior art teaches a first connector structurally distinct and separable from the power socket
- Whether prior art teaches that the power socket is supplied with power via the power socket’s electrical connection with the second connector

(RMTA [Paper 28] at i and 7-25; PO RMTA Reply [Paper 40] at 1-12)

LIMITATION (B) IS SUPPORTED AND DEFINITE

“[T]he power socket is electrically connected with the first connector, the second connector, the center fan and the illumination area, such that when the power socket on the one first side of the body is supplied with power **via the power socket's electrical connection with the second connector**, the center fan and the illumination area of the body of the first illumination fan are respectively driven into rotation and Illumination[.]”

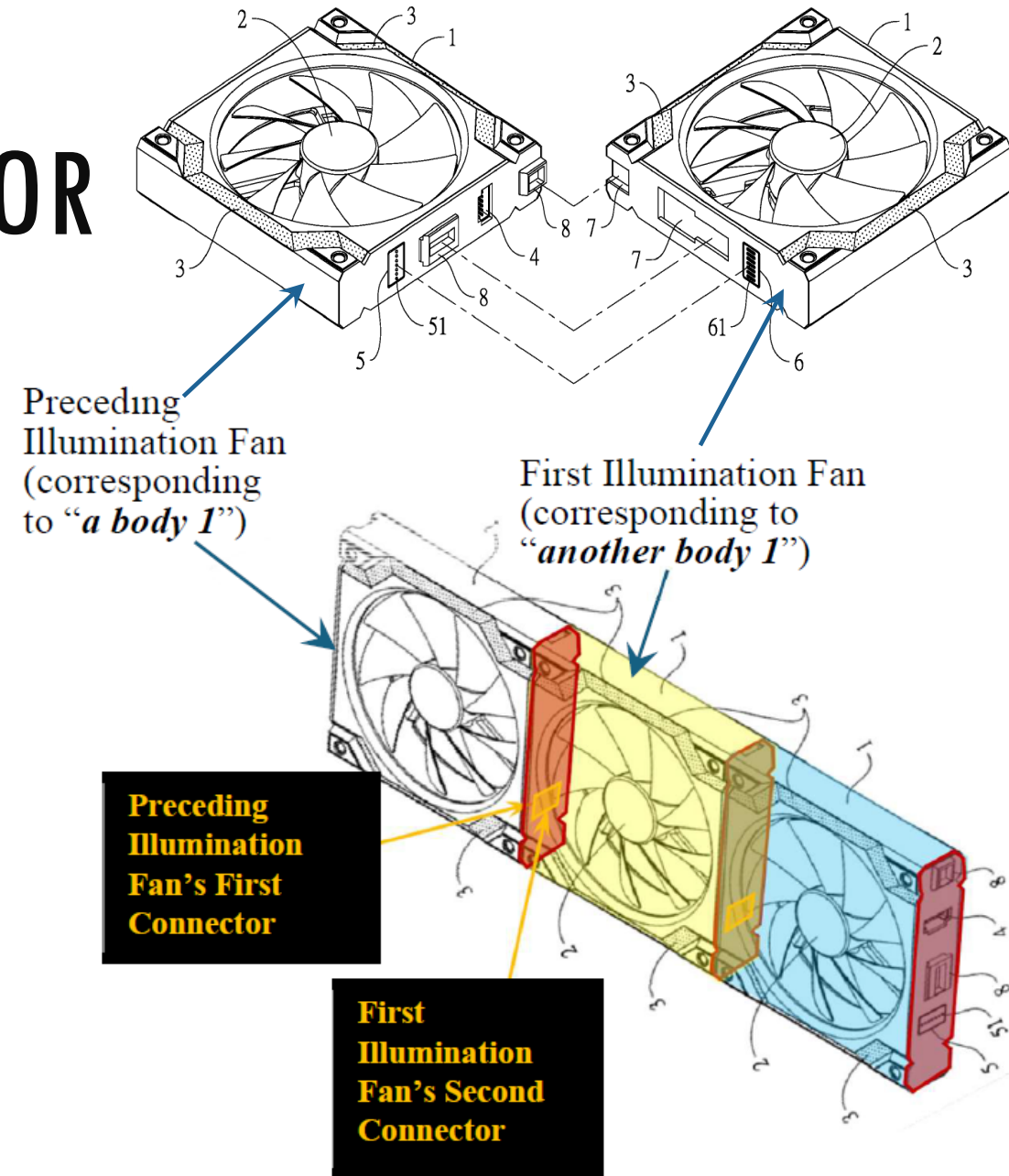
(RMTA [Paper 28] at 7-8; Ex-1001 at 1:53-2:2; PO RMTA Reply [Paper 40] at 1-3, 5-7)



POWERED VIA 2ND CONNECTOR

“If at least two bodies 1 [of, respectively, the preceding illumination fan and the first illumination fan] are joined together to form multiple sets of fans (as shown in FIGS. 2 and 3), the first connector 5 [of the preceding illumination fan] is provided with an electrically conductive terminal 51, and the second connector 6 [of the first illumination fan] is provided with an electrically conductive contact face 61 to be electrically connected with the electrically conductive terminal 51, so that when the first connector 5 of a body 1 [of the preceding illumination fan] is connected to the second connector 6 of another body 1 [of the first illumination fan], the fan 2 of the another body 1 can be driven into rotation and the illumination area 3 can be illuminated.” (Ex-1001 at 3:7-16)

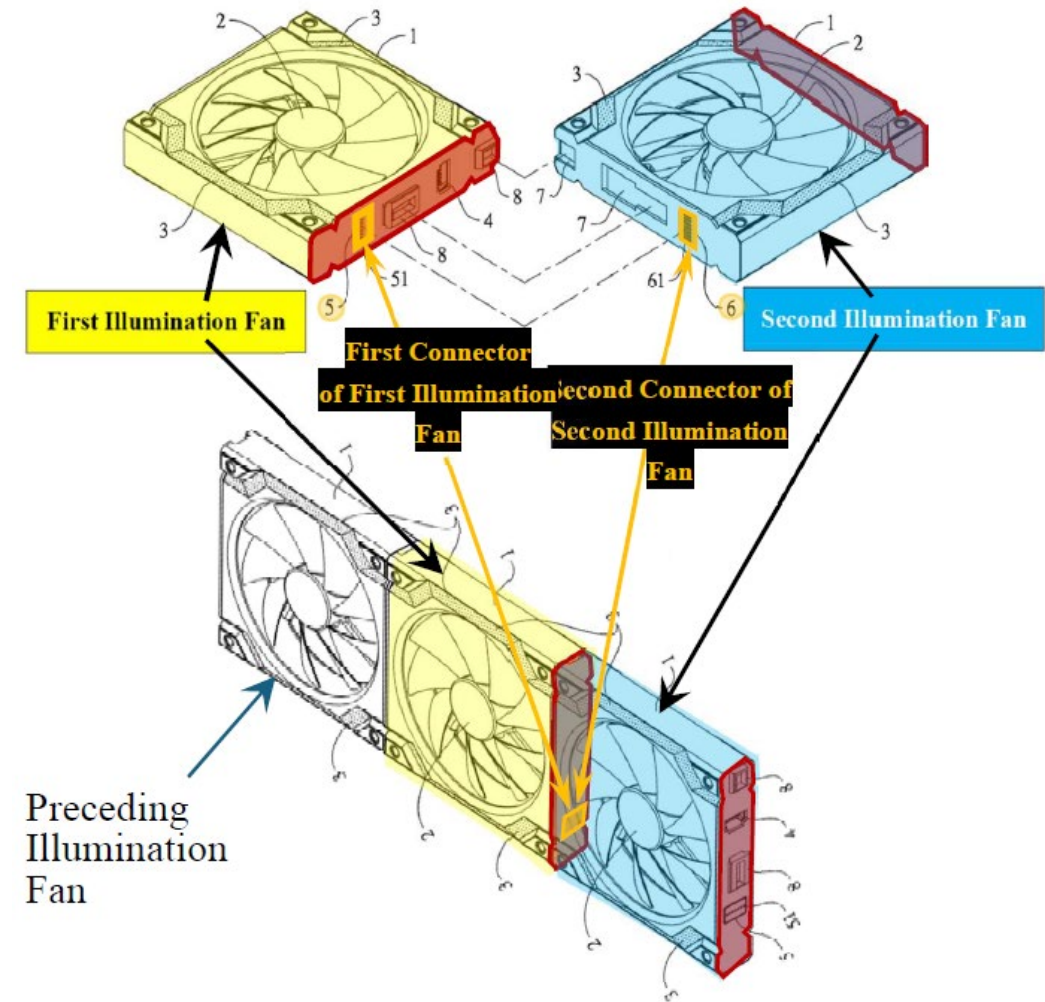
(RMTA at 9-10; PO RMTA Reply at 1-3, 5-7)



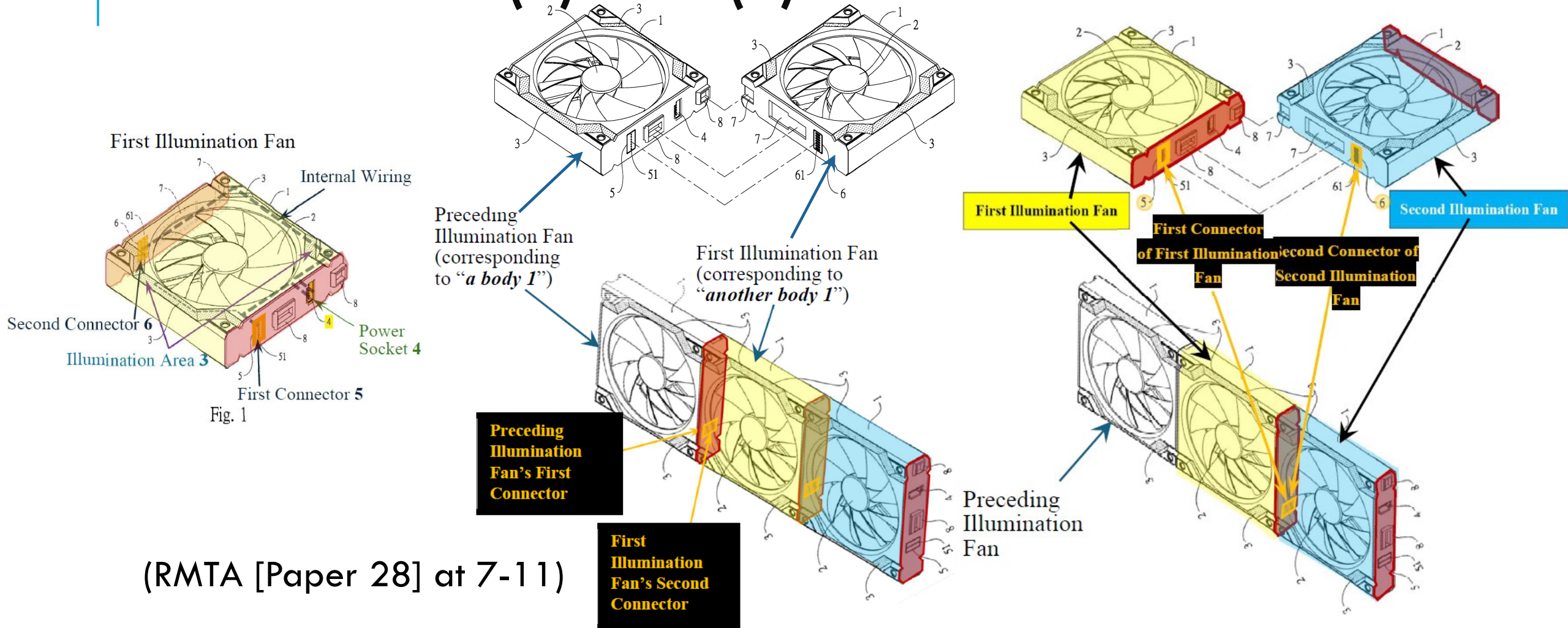
LIMITATION (C) IS SUPPORTED AND DEFINITE

- “[W]hen the first connector of the body of the first illumination fan is connected with a second connector of a body of the second illumination fan, a center fan and an illumination area of the body of the second illumination fan are respectively driven into rotation and illumination.”

(RMTA at 10-11; PO RMTA Reply at 1-3, 5-7)



LIMITATIONS (B) AND (C) CAN OCCUR AT SAME TIME



(RMTA [Paper 28] at 7-11)

“ILLUMINATION AREA” IS SUPPORTED

- FIG. 1 shows a first illumination fan comprising an illumination area (3) located at the top of the body (1) and disposed on at least two sides of the center fan (2). (See Ex-1001 at FIG. 1, 2:64-65; Ex-1002 at FIG. 1 (p. 59), p. 57; Ex-2017 at FIG. 1 (p. 25.), pp. 21-22.)

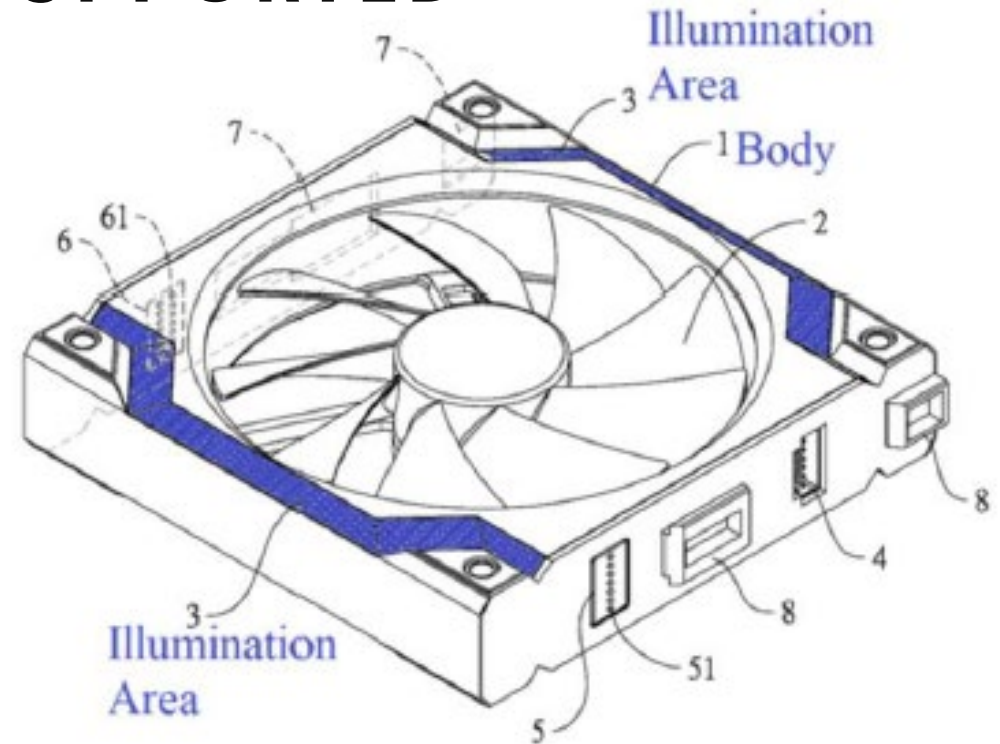


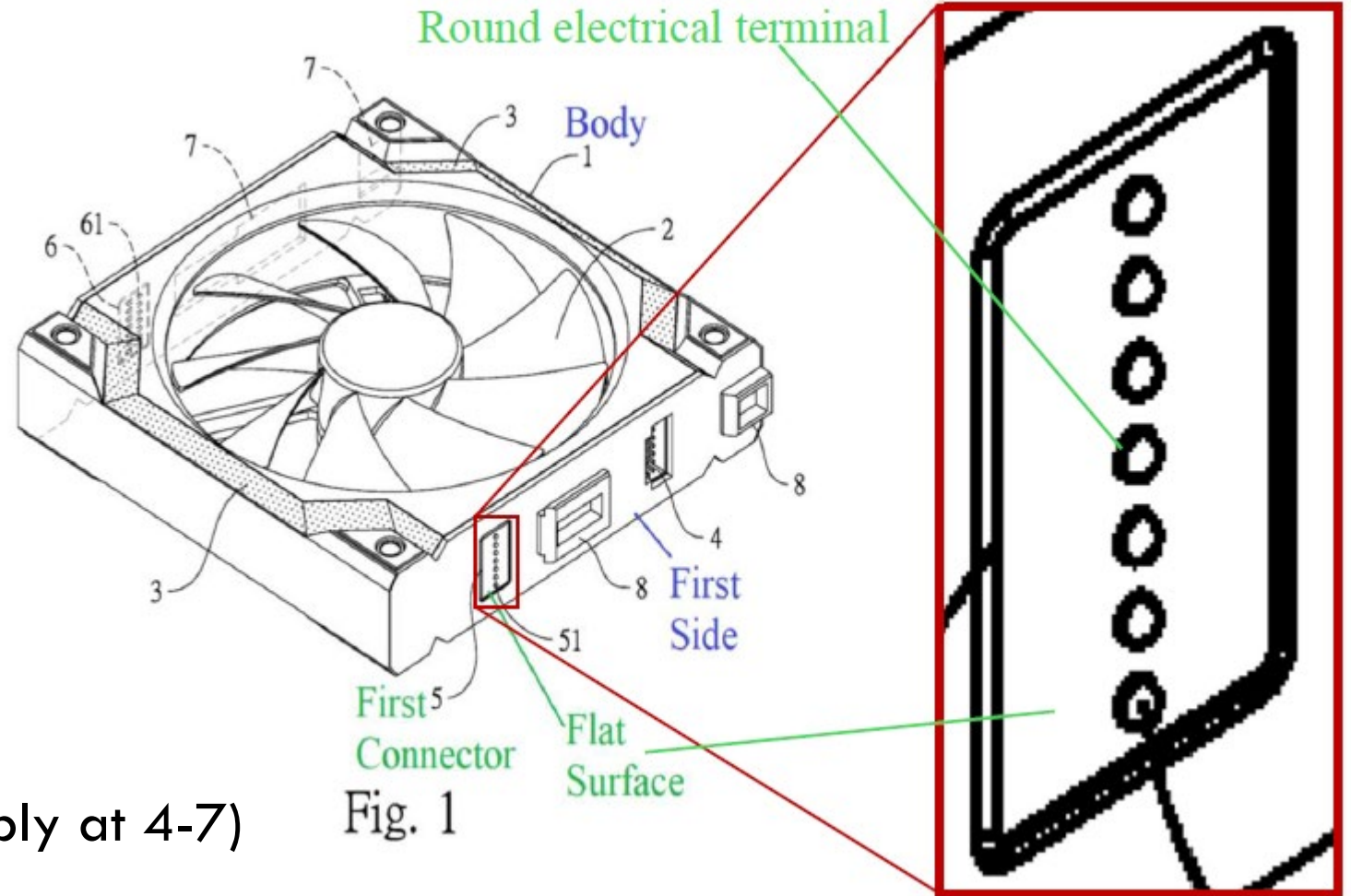
Fig. 1

(RMTA at 6; PO RMTA Reply at 3-4; Ex-2054, ¶¶ 29-30 (citing Ex-1001, 2:67-3:6))

“FLAT SURFACE” IS SUPPORTED AND DEFINITE

- FIG. 1 illustrates a first connector (5) with a first flat surface disposed on the first side of the body (1) and comprising a round electrical terminal.

(RMTA at 15-16; PO RMTA Reply at 4-7)



PETITIONER FAILS TO MEET ITS BURDEN

- By rule, a Petitioner bears “the burden of persuasion to show, by a preponderance of the evidence, that any proposed substitute claims are unpatentable” under 37 C.F.R. § 42.121(d)(1). Indeed, it is Petitioner’s burden to “specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4). Critically, Petitioner failed to show how the prior art teaches claims 6 and 7 ***limitation-by-limitation***. (See generally Opp. [Paper 36] 8-25.) Thus, Petitioner cannot carry its burden to show claims 6 and 7 are obvious.

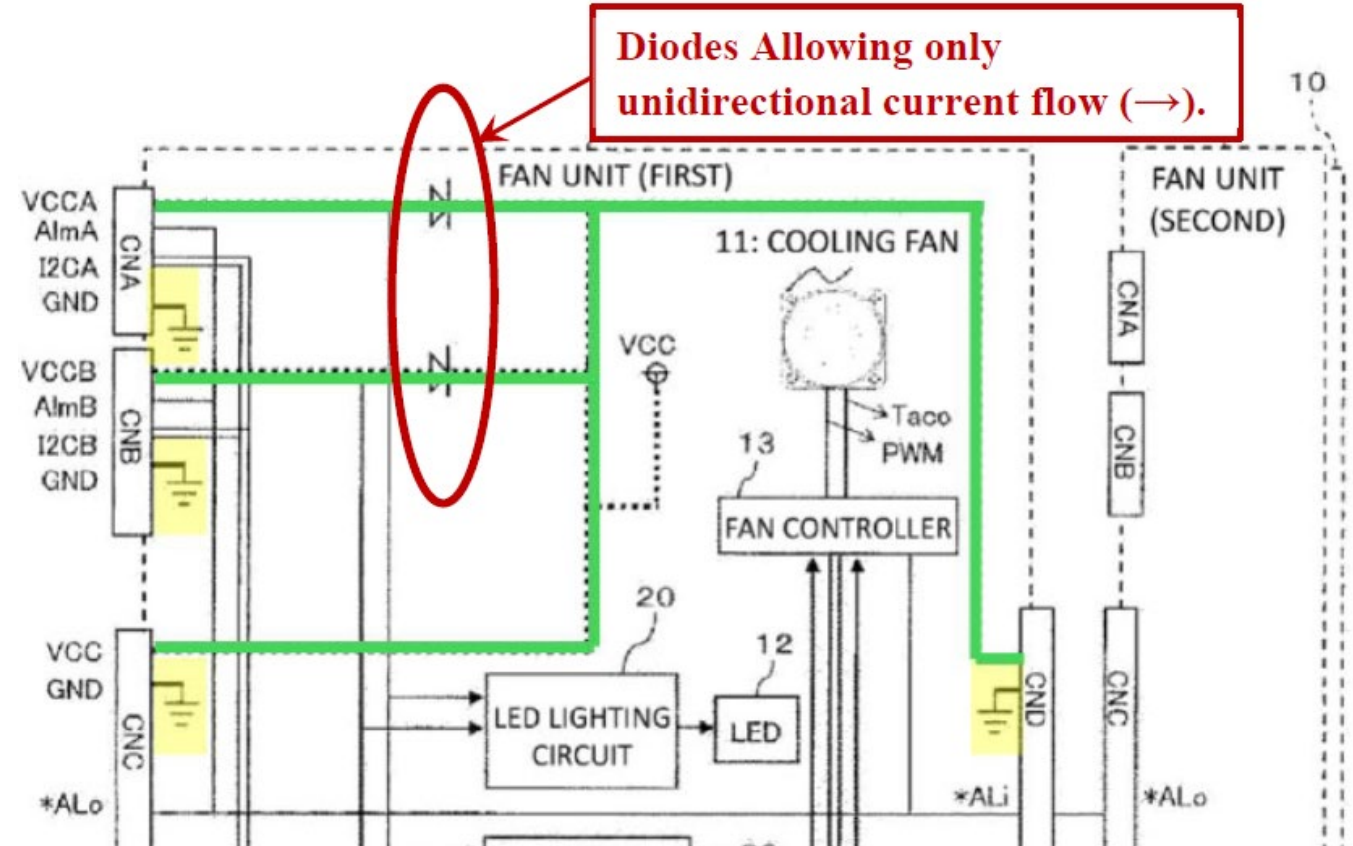
(PO RMTA Reply [Paper 40] at 7)

PRIOR ART DOES NOT TEACH “FIRST CONNECTOR”

- Tsuji cannot meet the requirement that “the first connector is structurally distinct and separable from the power socket” and is on the **same** “first side” as the “power socket.” (Guidance [Paper 25] at 18-21.)
- Lai’s **single** input 111 and **single** output 112 cannot meet the requirement that “the first connector is structurally distinct and separable from the power socket.” (Guidance at 24-28.)
- Dr. Wolfe admitted he had not combined other art for this limitation.
(RMTA [Paper 28] at 22-25; PO RMTA Reply [Paper 40] at 8-11)

NO POWER VIA 2ND CONNECTOR IN TSUJI

- Tsuji's diodes confirm its purported power socket CNA/CNB cannot be supplied with power via its purported second connector CND.

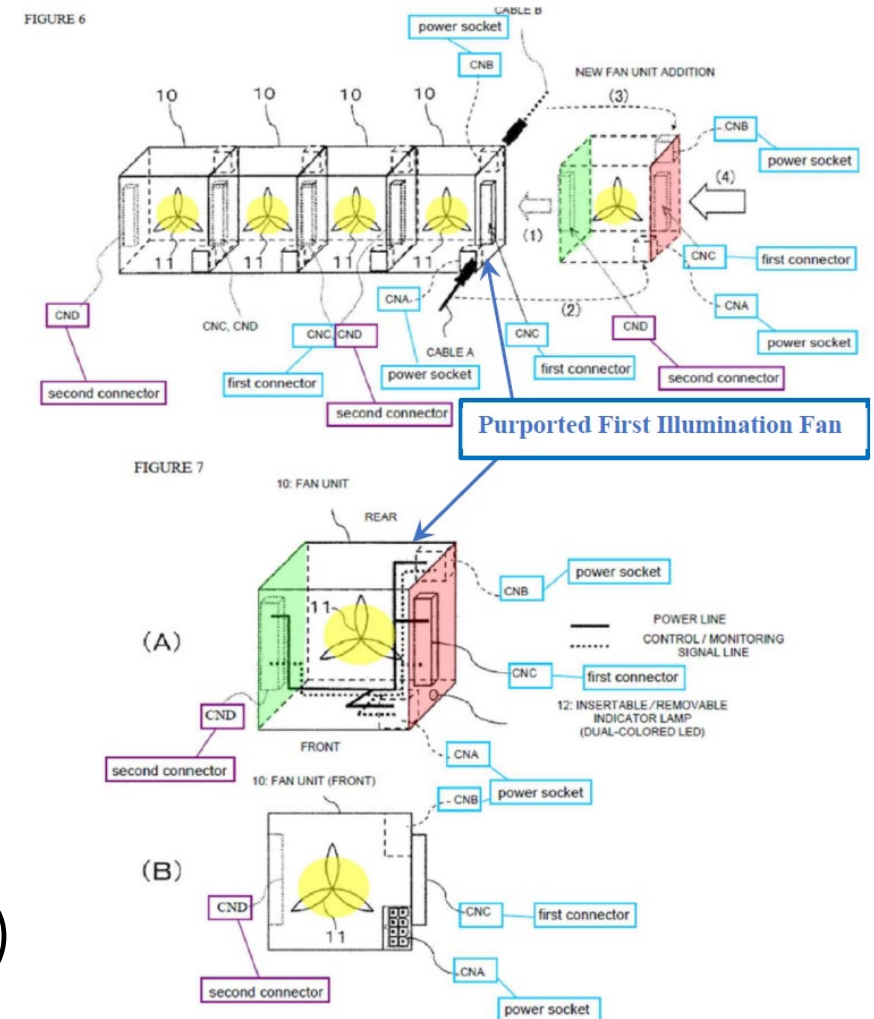


(PO RMTA Reply [Paper 40] at 11; Ex-2054 at ¶ 48)

NO POWER VIA 2ND CONNECTOR IN TSUJI

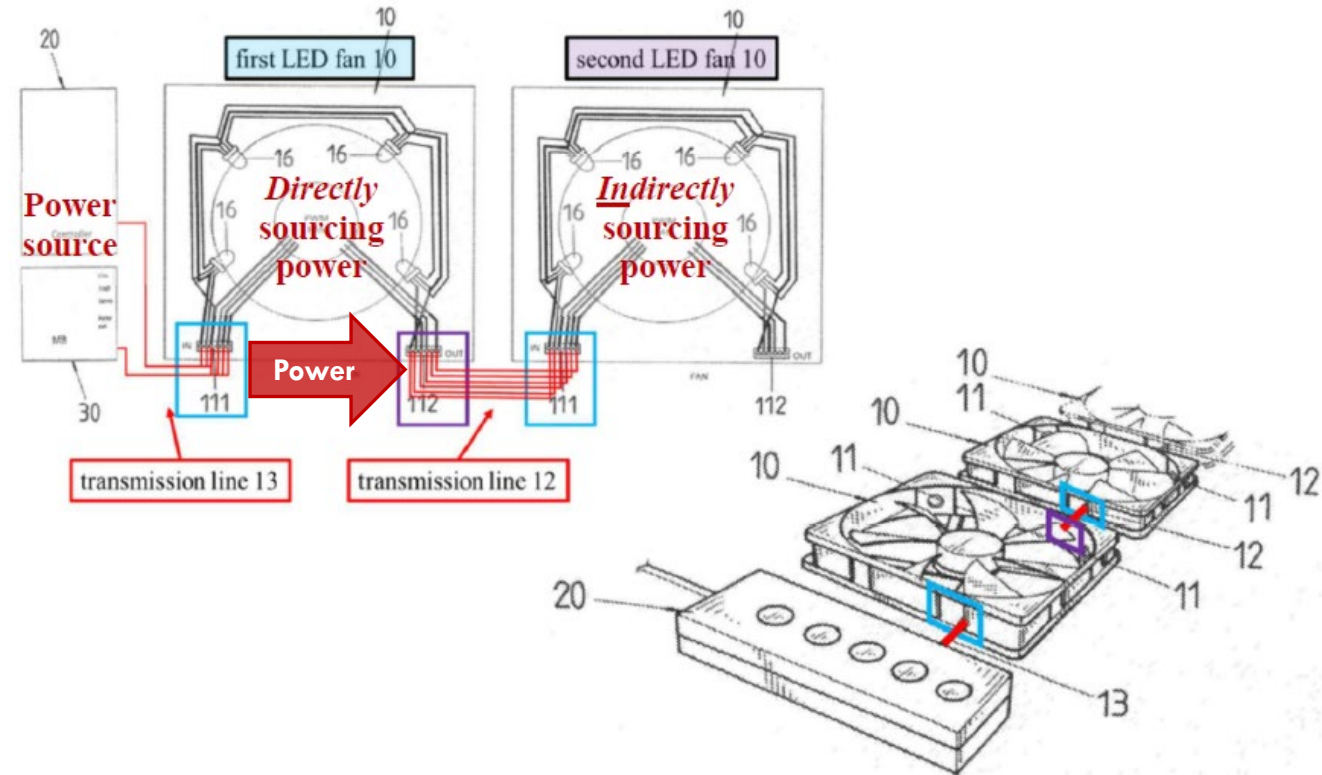
- The purported second connector CND (in purple boxes) of the purported “first illumination fan” is never in a position to supply power to the purported power socket CNA/CNB (nor CNC in blue boxes, if mapped to include a power socket).

(PO RMTA Reply [Paper 40] at 11; Ex-2054 at ¶ 49)



NO POWER VIA 2ND CONNECTOR IN LAI

- The mappings by Petitioner show that the purported power socket 111 supplies power to the purported second connector 112, and can never be “supplied with power via the [purported] power socket’s [111] electrical connection to the [purported] second connector [112]” of the “first illumination fan” as in contrast required by substitute claims 6 and 7.



(PO RMTA Reply [Paper 40] at 11-12; Ex-2054 at ¶¶ 50-51)

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of this **PATENT OWNER'S DEMONSTRATIVE EXHIBIT** has been electronically served on Petitioner by emailing the following addresses:

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